INDEX

New Brunswick Board of Commissioners of Public Utilities

In the Matter of an application by NB Power dated January 8, 2002 in connection with a proposal for Refurbishment of its facility at Point Lepreau.

Delta Hotel, Saint John, N.B.
May 27th 2002, 10:00 a.m.

Henneberry Reporting Service

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CHAIRMAN:	David C. Nicholson, Q.C.
COMMISSIONERS:	Robert Richardson Ken F. Sollows Jacques Dumont H. Brian Tingley
BOARD COUNSEL	Peter MacNutt, Q.C.
BOARD SECRETARY:	Lorraine Légère

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CHAIRMAN: Perhaps the technician could tell me whether or not, in order for the Shorthand Reporter to get feed, we have to push the button today or not. No, we don't. Okay.

Good morning, ladies and gentlemen. This is the reconvening of the application of the New Brunswick Power Corporation in reference to proposal for refurbishment of its facility at Point Lepreau.

I will ask for appearances please. First of all on behalf of NB Power, the applicant.

MR. HASHEY: Thank you, Mr. Chairman. David Hashey, Terry Morrison, Ken Little at the front table with the support staff, Ms. Tracy, Mr. Lockhart behind us as well as the panel members are of course all present as well.

I take it they won't -- we will introduce them as they take the stand for their presentation, Mr. Chairman.

CHAIRMAN: Yes. I think that would be better, Mr. Hashey. Thank you.

Intervenors, the formal intervenors. Atomic Energy of Canada Limited?

MR. MILLER: Mr. Chairman, Bernie Miller on behalf of AECL. With me is Matthew Hayes and Joe Howieson.

CHAIRMAN: I got Matthew Hayes. But the last one?

MR. MILLER: Joe Howieson.

CHAIRMAN: Thanks, Mr. Miller. Canadian Unitarians for Social Justice?

MS. FLATT: Sharon Flatt. And as well Gordon Dalzell with me. Thank you.

CHAIRMAN: City of Saint John?

MR. CAMPBELL: Craig Campbell for the City of Saint John.

CHAIRMAN: Thank you, Mr. Campbell. I'm looking forward to meeting all of these other gentlemen that you have listed alongside your name as appearing for the City of Saint John. Will we ever see them, do you suppose?

MR. CAMPBELL: I'm not sure.

CHAIRMAN: Okay. Good. Conservation Council of New Brunswick?

MR. COON: Good morning, Mr. Chairman. David Coon, David Thompson and Andrew Secord will be joining us as soon as his duties at the university allow.

CHAIRMAN: Mr. Coon. Mr. Craik, Neil Craik?

MR. CRAIK: Present.

CHAIRMAN: Energy Probe? Rodney J. Gillis?

MR. ALBERT: Thank you, Mr. Chairman. My name is Richard Albert. I'm assisting Mr. Gillis who will be returning shortly.

CHAIRMAN: Thank you, Mr. Albert. J. D. Irving, Limited?

MR. WOLFE: Thank you, Mr. Chairman. Wayne Wolfe and Mark Mosher from J. D. Irving. And Bill Dever will be here later on.

CHAIRMAN: Good. Thank you, Mr. Wolfe.

Daniel LeBlanc?

MR. LEBLANC: (Microphone not on)

CHAIRMAN: Comment ca va. Province of New Brunswick, Department of Natural Resources?

MR. HYSLOP: Good morning, Mr. Chairman. Peter Hyslop, Don Barnett and Mr. Terry Thompson for the Province of New Brunswick.

CHAIRMAN: Saint John Citizens Coalition for Clean Air was already spoken for by the Canadian Unitarians for Social Justice.

MR. DALZELL: Edward Dalzell and (inaudible) in terms of the process. And Sharon Flatt is with me as well with the Saint John Citizens Coalition for Clean Air. So it is a joint effort.

CHAIRMAN: All right. Well, then in that case, Mr. Dalzell and Ms. Flatt, where do you want to come in the order of intervenors?

Do you want to come second under Canadian Unitarians for Social Justice? Or do you want to be down around, oh, seven or eight under Saint John Citizens Coalition for Clean Air?

MR. DALZELL: We will prefer to go in the second spot --

CHAIRMAN: Okay.

MR. DALZELL: -- as planned. Thank you.

CHAIRMAN: Thank you. Saint John Energy?

MR. YOUNG: Good morning, Mr. Chairman. Dana Young, Tony Furness representing Saint John Energy.

CHAIRMAN: Thank you. Informal intervenors. Canadian Manufacturers and Exporters? Not represented here today.

Canadian Nuclear Workers Council?

MR. MATHESON: Mr. Chairman, Duncan Matheson of Canadian

Nuclear Workers.

CHAIRMAN: Thank you, Mr. Matheson. IBEW Local 37 and IBEW District Number 1?

MR. MATHESON: I'm also representing those people. It will be the people listed who will be actually making the presentations. David Shier for the Nuclear Workers Council, John Cole or Ross Galbraith for IBEW 37 and Will Paul for District 1.

CHAIRMAN: Good. Thank you, Mr. Matheson.

Union of New Brunswick Indians? Not represented.

The Board staff is represented by?

MR. MACNUTT: Peter MacNutt. And I'm accompanied by Doug Goss, Gaye Dresher, Jim Easson and John Lawton.

CHAIRMAN: Thank you, Mr. MacNutt. My intention would be to go through a number of housekeeping items this morning first.

And then I will turn to the intervenors. And if they -- and the applicant. And if they have anything that they wish to bring up by way of motion before NB Power's panel/panels takes the witness stand then we will do so.

First of all exhibits. My understanding is that we are presently at exhibit A-15. Am I reading this right, Mr. MacNutt? I'm looking at Mr. MacNutt's memo here.

MR. MACNUTT: Yes, Mr. Chairman.

CHAIRMAN: Now the next documents that should be marked in accordance with my schedule here are intervenor responses to Intervenor RI's.

Now does NB Power have a copy of that or have we fallen through the cracks on that one? Ms. Tracy nods her head. I would like to introduce them is what I would like to do.

MR. HASHEY: Mr. Chairman, this is the book.

CHAIRMAN: Yes. What do we have in it, Mr. Hashey, just so that the record shows?

MR. HASHEY: Well, we have -- in this book is the affidavit of Mr. Ambeault, the c.v. of Mr. Kugler. There is the evidence May 6th 2002 of AECL. And there is the interrogatories due May 14th.

Now this is the -- we now have a response from Mr. Adams that came late to a request for answers to that interrogatory. And the Union of New Brunswick Indians, one interrogatory was sent. And there has been no response.

CHAIRMAN: Mr. MacNutt, would you go up and look at the volume as well with Mr. Hashey and give the Board your suggestion on how we handle that particular volume, as to whether we have it as one exhibit number?

If so, suggest a number to me. And if not, any

suggestion you might have?

And gentlemen, my understanding is in that volume there is both the pre-filed evidence of Mr. Adams and as well the Union of New Brunswick Indians?

MR. HASHEY: That is correct and the AECL.

CHAIRMAN: Yes. AECL is all right. Well, we will accept it as an exhibit. I have some difficulty in accepting the other two as exhibits. My understanding is that for instance in reference to Energy Probe there may be some cross-examination of the c.v. of the proposed witness, Mr. Hashey. That is my understanding.

And secondly, with the Union of New Brunswick Indians, they are not here today but they have refused to participate in the process in that they have not responded to interrogatories. So I think what I will do is ask someone at your table, Mr. Hashey, to withdraw those two pre-filed evidences and we will keep them out from being marked at this time.

We may deal with them later on. For instance, if Mr. Adams does come forth and is represented at the hearing we will deal with his at that time. And we will let the Union of New Brunswick Indians know that this is what we have done and they can come later and deal with that as well.

Quite frankly from where I understand UNBI are coming, they probably would be better off being an informal intervenor and then just delivering a letter addressed to the Board rather than going through what they are going through. But anyway, we will communicate with them on that.

So are you through, Mr. MacNutt?

MR. MACNUTT: Mr. Chairman, yes. I don't think it is appropriate to have that one binder marked with the single exhibit number. I will just go through the individual items in the binder.

CHAIRMAN: We are having trouble hearing you up here, Mr. MacNutt.

MR. MACNUTT: Yes. The affidavit of Bruce Ambeault was previously introduced as an exhibit AECL 1 so it shouldn't be in the binder.

The c.v. of Gary Kugler, senior vice-president of Nuclear Products and Services of AECL -- it depends on how the Board is going to treat c.v.'s whether they are going to be marked as exhibits in advance or wait upon somebody moving to qualify that person as an expert at which time it may be marked.

The AECL evidence should have its own stand alone marking, possibly as AECL-2 prospectively. The Energy

Probe evidence is -- I think you just addressed that. And the Energy Probe evidence has at pages 11 to 13 the c.v. of Mr. Tom Adams. I don't know whether you want to break that out separately -- deal with it separately.

The IRs asked -- I don't -- it would be most appropriate to have the Energy Probe response entered as a stand alone exhibit, being intervenor response to IRs, and then that way the response which was delivered by Energy Probe on May 24th 2002 by e-mail contains both the information request and the response. And that series of questions and the responses could be entered as a stand alone exhibit.

CHAIRMAN: With frankness, I think that if we are not prepared at this time to allow the evidence to be introduced, then the interrogatories it is not useful to have them introduced at this time either. So we will set those all aside.

For instance, UNBI has not responded to the interrogatory or interrogatories that were placed within, so that there is nothing to decide there, but with Mr. Adams, his responses which I understand came in late, we will wait until we decide whether or not the actual pre-filed evidence is going to be accepted as -- I see you, Mr. LeBlanc -- accepted as an exhibit with the Board.

Okay.

Now, Mr. LeBlanc wants to say something so we will let him.

MR. MACNUTT: Just to conclude on the matter, Mr. Chairman, that is the contents of this binder. So I would suggest that the binder itself with its contents not be introduced as an exhibit at this time and the exhibits be dealt with as the Board has just identified them.

CHAIRMAN: All right. Would you, Mr. MacNutt, assist Mr. Hashey and I so as we go through the list of exhibits that we pick out of that binder what is in there that we wish to mark? Mr. LeBlanc?

MR. LEBLANC: Oui. Merci. J'ai oublié de mentionner plus tôt que M. Adams m'a demandé d'intervenir en son nom aujourd'hui. Malheureusement, il ne pouvait pas se rendre ici à Saint-Jean aujourd'hui, mais il compte se rendre pour témoigner de ses preuves qu'il a soumis, et également répondre aux interrogations que veulent poser Energie Nouveau-Brunswick.

Alors, il attendait d'avoir une idée plus précise de l'horaire des audiences pour venir ici à Saint-Jean.

CHAIRMAN: All right. Mr. LeBlanc, I can certainly appreciate why Mr. Adams would want to have some indication of when it might be that he would be heard as

an intervenor, unfortunately at the present time we can't give him that.

However, we will certainly -- you will be here I guess and you can -- you will be able to read how the panels are going, et cetera and when we are getting close to intervenor evidence, my suggestion is that you check with Mr. MacNutt periodically and see what his best estimate is at that time as well.

On the second point, the evidence which Mr. Adams has filed, it will not necessarily be accepted as evidence by the Board because it is opinion, opinion evidence, and you have to be qualified to be able to give opinion evidence before the Board will necessarily accept it.

I am not making any ruling on it at all. I am just simply saying the gentleman is not here. The applicant intends to question certain of his qualifications. And therefore, we are putting the matter in abeyance until such time as he does appear.

CHAIRMAN: Merci. M. Adams est une figure bien connu au niveau de la recherche en énergie au Canada alors je pense que -- je pense qu'il y a absolument aucun doute de ses qualifications. Alors, j'ai bien l'espoir qu'il va venir lui-même défendre non seulement son expérience mais également les preuves qu'il va soumettre.

CHAIRMAN: That is fine. And we hope that he will appear as well, Mr. LeBlanc.

Mr. Thompson had his hand up.

MR. THOMPSON: Yes. I was just wondering.

CHAIRMAN: Well, you haven't got -- you have got to have a mike.

MR. THOMPSON: Yes. I was just wondering if Mr. Adams was going to be informed by the Board.

CHAIRMAN: If Mr. LeBlanc is here representing him today and to speak on his behalf, I am certain that Mr. LeBlanc will be in touch with him.

MR. THOMPSON: But the Board will not directly?

CHAIRMAN: No, I --

MR. THOMPSON: Thank you.

CHAIRMAN: We can't keep tabs on everybody who is and isn't here. And if somebody is represented, then that individual who is representing him, we take it for granted they will be in touch and let them know.

Now back to the exhibits. NB Power has a slide presentation that they have filed with the Board. And I would suggest that that be given an exhibit number subject to any questions that the intervenors may have concerning it after we conclude the preliminary remarks here. Mr. Hashey, I think that should be A-16. Now we have the NB

Power AECL contracts.

MR. HASHEY: Yes, Mr. Chairman, I have an exhibit book that contains the two new contracts that the Board had requested.

CHAIRMAN: All right.

MR. HASHEY: And I would offer that they -- as you know, they have been circulated last week. There are two contracts. There is the refurbishment agreement and there is the plant performance agreements. Okay. The plant performance agreement went on Friday. They are both contained in one volume.

CHAIRMAN: All right.

MR. HASHEY: If I could offer that.

CHAIRMAN: Fine.

MR. MACNUTT: Just by clarification, Mr. Chairman.

MR. HASHEY: I'm sorry --

MR. MACNUTT: Yes. The refurbishment agreement was provided on Friday, May 24th, Mr. Chairman. The plant performance agreement is being provided for the first time this morning.

CHAIRMAN: That will be A-17 and it contains both the refurbishment agreement and the plant performance agreement.

MR. HASHEY: Mr. Chairman, I have copies of the agreement.

That is what is contained in this envelope.

CHAIRMAN: Okay. All right. If you would give those to the Board secretary. I have got one.

Now, Mr. MacNutt, I'm looking at your memo on page 4, Roman numeral IV. And the explanation sheet for items redacted in exhibit A-15. Are you suggesting that that should be given an exhibit number?

MR. MACNUTT: Again, Mr. Chairman, I didn't quite follow?

CHAIRMAN: I didn't hear that, Mr. MacNutt, sorry.

MR. MACNUTT: Oh, the retubing agreement you are referring to, Mr. Chairman?

CHAIRMAN: No. Explanation sheet for items redacted in exhibit A-15, A-15 being the binder.

MR. MACNUTT: You are -- where in which memo are you?

CHAIRMAN: Pardon me?

MR. MACNUTT: Which memo and where are you?

CHAIRMAN: I'm talking about the exhibit memo, Mr. MacNutt. And it is item number C, I believe, yes. On page C, the top of the page -- I'm sorry, on page 4, top of the page, Roman numeral IV.

MR. MACNUTT: I have you now, Mr. Chairman, thank you. At the end of the hearing when the fuel supply agreements --

CHAIRMAN: Yes, the question --

MR. MACNUTT: -- were ordered to be disclosed, I inquired if

the explanation sheet explaining what the redacted items were, when it would be filed. And you suggested to Mr. Hashey and he agreed that it would be filed today. The only reason it would not be a separate sheet or sheets filed today would be is that the contracts when supplied contained sufficient information explaining the redacted information.

CHAIRMAN: Okay. And just refresh my memory again. But I think Ms. Tracy was dealing with this is that she has put in a replacement volume in reference to was it A-15. I can't remember. But, yes, she is indicating that that's the case. Okay. So this -- you are saying that the two agreements which have been filed today as A-17 have sufficient detail in the redacted portions, so you don't need an explanation sheet.

MR. HASHEY: I don't believe there is anything redacted.

CHAIRMAN: Oh, is that right?

MR. HASHEY: Except possible specifications that were agreed.

CHAIRMAN: We have looked after all redactions then, okay. That's great. The next number, as you are all aware, the Board's -- we don't want to call him auditor, but Mr. Easson his report will be filed with the Board some time this week. It took Mr. Easson more time than he had

originally anticipated that it would, but it will be available. And when it is, why we will introduce it as a Board exhibit.

And in accordance with our previous procedure, that if there are any questions but not cross-examination to be put to Mr. Easson, why we will make arrangements to do that at that time. Okay.

Now the witness c.v.'s I would suggest that they be put in as exhibits now. If you want to put them in, for instance, by party, so that NB Power's witnesses c.v.'s would be all one, let's say an exhibit number for panel A and an exhibit number for panel B, that's fine, Mr. Hashey.

But then for AECL there is just the one, as I understand it, Mr. Miller, and that's Dr. Kugler. We will get that one. And then we will put in Mr. Adams from Energy Probe.

MR. HASHEY: Mr. Chairman, we might need a moment to get the c.v.'s, they are back in the room. They were sent out to everyone and we do have them.

CHAIRMAN: All right.

MR. HASHEY: We just need to have a moment to get them.

CHAIRMAN: All right. There is -- Mr. Miller, do you have a copy of Dr. Kugler's available right at hand while NB

Power is getting theirs put together?

MR. MILLER: I don't have it right now.

CHAIRMAN: I'm going to suggest that what we do is that we leave the introduction of the c.v.'s until right after lunch today.

MR. HASHEY: Ours actually will be coming in a moment, but not a problem there. I agree with that.

CHAIRMAN: Yes. Well I think that will give Mr. Miller an opportunity to get Mr. Kugler's as well.

Has everybody received a copy of the slide presentation that's going to be -- which is A-16 and will be reviewed today? If anybody hasn't, why I think you should get in touch with NB Power.

Also the Board requested, and I believe NB Power has a number of documents that form part of previous hearings. And I am going to list them down that are available here. The reason being is that they were referred to in NB Power's evidence that was prefiled. And we felt that the exhibits -- or sorry, those exhibits from the other hearings should be available to be made an exhibit on the record of this hearing, if required by any of the parties.

The first is the load resources review dated March 2001, revision number 1, May 2001. It was introduced in the generic hearing as exhibit NBP-1 and the evidence of

William Marshall being Appendix B.

The second which is available again is the Load Forecast 2003, 2011 dated February 2002. It was exhibit A-1 in the April 2002 load forecast hearing. And, again, in exhibit A-1 of the evidence of William Marshall is Appendix A.

The Business Plan and Financial Projection 2001/2002 to 2008/'09 dated March of 2001 which was introduced in the Coleson Cove hearing in exhibit A-6, the evidence of Sharon MacFarlane as Appendix C.

And finally the NB Power Annual Report 2000/2001, for the year ended March 2001. Page 37 was introduced in the Coleson Cove hearing as exhibit PUB-5. And page 49 introduced in that same hearing as exhibit PUB-6. The whole of the Annual Report is available here today for production.

Now for those of you who were not here on the May 2nd 2002 Motion's Day, we had the fuel supply agreements in a single binder, they were redacted, which later in the day was marked as exhibit A-15. And then Ms. Tracy in a letter to the Board, I believe, dated May the 6th requested the binder containing the contracts which were delivered on May 2nd be discarded and a new binder distributed by NB Power by courier on May the 6th to all

participants be substituted for the May 2, 2002 version. As it better reflects the redacting directed by the Board and containing notes as to what was redacted and providing tabs. Okay. If you don't have a copy of that replacement binder, you probably should see Ms. Tracy about it. And I think the best thing for me to do is to -- is to remark the substitute binder. Have I already done that, Madam Secretary?

MS. LEGERE: No.

CHAIRMAN: I will do that right now. Okay. That would be A-15. And I will put a date on it, today's date, so that I will know that that's the new one.

Any of the parties have anything to do with marking or re-marking of exhibits at this time, before I go on to some procedural matters, other than exhibits? Yes, Mr. Coon?

MR. COON: Mr. Chairman, I had a couple of exhibits that we wanted to have marked so that we could refer to them during cross-examination of the first panel. Is this the time to introduce them?

CHAIRMAN: Would that be prior to looking at the slide presentation or is that going to be on the prefiled evidence?

MR. COON: It's on the prefiled evidence.

CHAIRMAN: Okay. I think it would be better to wait until we go to that.

MR. COON: Wait. Thank you.

CHAIRMAN: Thank you, Mr. Coon. All right. As I'm sure all of you are aware, our exhibit marking system was developed back in May of 2001 and if anybody is not familiar with it why the Board secretary has a copy of that.

Also the Board during the pre-hearing conference, we gave Mr. Matheson and the IBEW, the Local and the National union -- sorry -- Regional I guess -- a two week period where they consider whether or not they want to be full intervenors or informal. Ultimately they chose to be informal and are informal intervenors, and as well the same thing happened with Hydro Quebec and they are an informal intervenor.

We produced a document concerning the language of the hearing on March 27th, 2002, and that again is available from the Board secretary.

Prior to the commencement of the hearing NB Power counsel, Mr. Hashey, had been speaking with Board counsel concerning what we lawyers call rebuttal evidence, and I thought I would share with you some thoughts the Board has on that.

In a court of law why when you call your witness then

you have to cover whatever you can anticipate the story from the other side will be and have your witness, if that witness comes on first, address what you can reasonably anticipate. If after you close your case and the other party addresses the court, they touch upon subject matter that you couldn't reasonably be anticipated to anticipate, then -- or they bring up a subject matter you couldn't reasonably anticipate, then you are allowed to recall your witness or another witness to rebut what the other party's witness said.

So we basically follow the same procedure here, so that for instance in the case of NB Power now that there are possibly intervenor witnesses being called who have filed prefiled evidence, then it is appropriate for them to in addition to what they have put in as their own prefiled evidence to give evidence concerning what the intervenors are proposing to say. Otherwise we would be here for a long time because you keep calling and re-calling and rebutting and rebutting.

So NB Power when their panels take the stand they will be addressing evidence that they feel may be brought forth by the two intervenors.

There is also another matter which deals with that, is that all intervenors and NB Power, the applicant, are

allowed to cross-examine any other intervenors witness unless it's as they say friendly, the witness is friendly. So in the case of AECL, AECL is supporting the application, so if Mr. Hashey has any questions to put to Dr. Kugler, why they should not be in the form of a leading question but rather allow -- but so that it's not friendly cross-examination.

My understanding, and Mr. Hashey can correct me if I am wrong, this is what Mr. MacNutt has indicated to me, is that Panel B of NB Power proposes to take the stand and deliver its portion of the opening slide presentation, then step down with no cross-examination. Then Panel A will take the stand and deliver its portion of the opening slide presentation and remain on the stand for cross-examination concerning all matters, that is, the slide presentation plus prefiled evidence. And then panel B will retake the stand and be open for cross-examination, again on all matters which includes the slide presentation and prefiled evidence. Is that correct, Mr. Hashey?

MR. HASHEY: That's correct, thank you, Mr. Chairman.

CHAIRMAN: Okay. Normally during the hearing if we -- once we conclude the evidence, in other words, all the parties have brought their witnesses and cross-examination has occurred, we leave some length of time, depending on the

convenience to the parties, so that parties can prepare their summation for the Board. And I would propose that we will do the same now.

The informal intervenors, I'm going to ask them right now what their preference is, but normally the informal intervenors would prefer to wait until very close to the end of the actual hearing itself and then the Board set aside a day, and I would suggest one of the days later in June when this facility is not available they could address the Board with their presentations in our premises in the City Hall building. So I wonder if -- and, you know, we can tentatively set that date now if they so desire.

The Canadian Manufacturers and Exporters are not represented here today, are they? No. Okay.

Mr. Matheson, you are here for the Canadian Nuclear Workers Counsel as well as the two IBEW representatives. Have you any thoughts on when you would like to address the Board.

MR. MATHESON; I would like to do it as -- these would actually be three separate presentations --

CHAIRMAN: Yes.

MR. MATHESON: -- and I would like to spread them out a bit and have Local 37 toward the end.

CHAIRMAN: Okay. All informal intervenors would be on the same day.

MR. MATHESON: Oh, okay. I thought they were different days.

CHAIRMAN: No. We would try to get it done in one day. And my suggestion is we do it towards the end of the hearing process, or at least this four week period that we are dealing with here now, is that okay with you?

MR. MATHESON: My preference would be toward the end.

CHAIRMAN: All right. I will tell you what we will do, is that I will have Board counsel check during our first break and just find out what days we are not here that we would be available to have that presentation in the Board's premises. Now don't get me wrong. Any of the participants including the applicants and other intervenors who want to attend can, but it just means that we can make use of an off-day.

MR. MATHESON: Okay.

CHAIRMAN: Great.

MR. HASHEY: Can I have a moment, Mr. Chairman. Okay.

CHAIRMAN: Okay. Again when cross-examination time comes we normally have that front table that you four are sitting at and we reserve that for the cross-examiners, and they can come there, I think we will do that, but that won't

occur until at least this afternoon.

MR. HASHEY: Yes, Mr. Chairman. Actually I requested the panel sit there this morning. We are limited in space here and these people obviously who are sitting at that table will be sitting to your right.

CHAIRMAN: I don't know whether they are all on A or B.

MR. HASHEY: You are looking all at A's.

CHAIRMAN: I'm looking all at A's. I'm not going there.

Transcript of the proceedings. There has been an arrangement made with NB Power that the transcripts will be made available to NB Power by the shorthand reporters and NB Power will put them on a floppy disk for distribution in the morning following each day's hearing. There will be no charge for the provision of the floppy disk to participants. Now if you don't have facilities for converting the electronic version to paper then I suggest that we have a discussion during the next break or the noon hour break about that. I know that NB Power has some facilities but we might be able to make the Board's printers available or whatnot. That's -- I know the secretary now hates me for even suggesting that, but there you have it.

On the opening day -- on the opening of the motions day hearing to consider the request by NB Power to provide

documents as requested in CCNB-54, the Board stated that it had directed its staff to retain a DSM expert to analyze the evidence that has been filed with respect to DSM, and, depending on the outcome, that expert may or may not be requested to give evidence at the hearing. One of the difficulties related to when such a report would be available should it be appropriate that the expert be called to give evidence. I don't know if that's a premonition or what, but -- anyway. Anyhow, that expert has been retained and I will ask Mr. MacNutt to correct me if I am wrong, but hopefully they will have reviewed and be in a position to speak with staff concerning that review either today or tomorrow. That's my understanding.

MR. MACNUTT: That is correct, Mr. Chairman. Late tomorrow we should be in a position to positively identify where that matter stands.

CHAIRMAN: All right. And just so that all of the parties here are aware, the Board does not have any dealings with the expert at all. That expert would be dealt with strictly by Board staff, and if they come back and find that on the whole what has been filed is appropriate in their opinion, why the Board would certainly not I don't think be calling him. There is not much use in spending money to do that.

MR. HASHEY: Mr. Chairman, on that point, if there is a witness called, it is my understanding that you would give us some time to respond to that report or at least to have an opportunity or I assume probably Mr. Marshall would have to address that and would need some time to examine it and understand what the report says.

CHAIRMAN: Oh absolutely. I mean also, Mr. Hashey, depending on exactly what unfolds you should have the opportunity if you want to to put questions in advance like any other party would to your witnesses, et cetera. We will just -- let's see what happens and then we will work that out. But in no way do we want to blind-side anybody. We just simply want the best evidence that we can have in front of us before we make any decision.

Now speaking that way, the Board last week was -- had rather intense sessions in attempts to prepare ourselves to hear the evidence that is going to come before us. And there is one particular thing that we know that it's late in the process to say this, but to us it appears to be a very appropriate thing to do, and therefore the Board will require that NB Power file an updated version of the "Financial Projection of March 2001" to reflect the current estimate of the results of the 2001/2002 year. The update should also reflect any significant changes

that -- sorry -- charges that NB Power is aware of in the key variables for the 2002/2003 to 2008/2009 forecast. And we are aware that that will take some work on the part of people still in Fredericton, I am sure. We just believe that it's appropriate. For instance, during the Coleson Cove refurbishment hearing, why Ms. MacFarlane during her testimony said instead of the projected net profit for the fiscal year it now looks as if we are going to break even. Some of the figures in the projection show that there is -- it was not substantial but there was a fair amount of equity going forward, and yet if things are as we believe they were last fiscal period, then that equity is either non-existent or cut right back. So we believe that it's appropriate at this time that the revisions we are talking about be made.

If there is any problem, Mr. Hashey, as to exactly what it is the Board is anticipating here, please speak with Board staff and they will tell you exactly what it is that we expect.

Now other matters. Mr. Hashey, does the applicant have anything he wants to bring to the attention of the hearing?

MR. HASHEY: Could I just have a moment on that to consult?

CHAIRMAN: Certainly.

MR. HASHEY: Thank you. Mr. Chairman, on your last request on the financial, as far as using the updated and actual figures, yes, that can be done.

I would like to reserve comment on the second request to see if it is practical or if it's possible to do that, and we will discuss that with staff and I would ask to reserve to come back to the Board if there is a problem with that.

CHAIRMAN: Absolutely. Certainly, Mr. Hashey.

MR. HASHEY: Thank you.

CHAIRMAN: Now are there any other matters that the applicant wants to bring before the hearing at this time?

MR. HASHEY: I don't believe so, Mr. Chairman.

CHAIRMAN: Okay. Intervenors, commencing with AECL?

MR. MILLER: I have no matters.

CHAIRMAN: The Canadian Unitarians for Social Justice and Saint John Citizens Coalition for Clean Air, anything preliminary?

MS. FLATT: Thank you. No preliminary matters.

CHAIRMAN: Okay. City of Saint John? Conservation Council?

MR. CAMPBELL: Nothing for the City.

CHAIRMAN: Sorry. Thank you, Mr. Campbell. Go ahead, Mr. Coon.

MR. COON: Yes, Mr. Chairman. Thank you. I have -- we have

three motions we would like to Board to give some consideration to. The first is an announcement from the provincial government is expected the middle of this week concerning the future ownership structure of NB Power.

CHAIRMAN: Where do you get that information?

MR. COON: I can't reveal my sources, Mr. Chairman, or I would be out of business.

CHAIRMAN: Okay. Sorry, go ahead, Mr. Coon.

MR. COON: Jobs could be on the line here. The announcement very -- may very well include a new legislative mandate for what remains of the public utility or whatever form it will take depending on the decision of the provincial government. So we would ask the Board to consider that as the decision -- an announcement seems to be imminent that you would consider delaying these proceedings until that announcement is formally made, so we know what we are dealing with as we go forward or even if we need to go forward. That's the first motion.

CHAIRMAN: Do you want to make it a three-pronged attempt here, Mr. Coon, or do you want us to deal with each one individually?

MR. COON: Why don't I give you the three and then you can deal with them.

CHAIRMAN: Okay.

MR. COON: The second one concerns the reason for this hearing as was mentioned in your decision of May the 2nd. This hearing has been convened to examine the best way to address the difference between NB Power's load forecasted for the next 10 years and the capacity of its generation resources in the absence of Point Lepreau by way of additional supply or a reduction in load.

And given that NB Power has failed to provide evidence on what it costs to reduce load to the degree that would obviate the need for refurbishing Lepreau, we are asking -- well we are pointing out that it is impossible to evaluate what would be the best way to address this forecasted difference between load and supply. The evidence is all there to evaluate alternative supply options but the evidence has not been supplied to evaluate load reduction options through energy efficiency. So we therefore are asking the Board to delay cross-examination of Panel B until the applicant supplies the necessary evidence or -- yes -- and that this would -- and that that would be particularly the applicant's costs to induce its customers to reduce their load by taking advantage of any economically attractive energy efficiency identified in NB Power's own evidence from the Load Forecast Hearing which amounted to 280 megawatts after accounting for the 57

megawatts of naturally occurring energy efficiency that they have built into their load forecast.

We had asked that that be carried forward into this hearing and that's not been done in evidence. So we are asking the Board to rule on this question in terms of delaying Panel B until that evidence is provided, and secondly, with respect to Panel B's presentation we ask that those parts of its presentation dealing with demand side management in lieu of that evidence not be presented today.

And then the third motion has to deal with -- it has to do overall with the presentation, the slides that NB Power wishes to make. It includes argument and in particular new evidence that has not been subject to interrogatories.

The new evidence in particular these slides are numbered, I guess, exhibit A-16. On slide 14 and slide 15 dealing with questions of heritage assets, the market design committee and so on. That's new and we would ask that that be -- that that be struck from the presentation of slides as well as questions of argument that are contained in the slides.

We can see the utility of a presentation on the technical facts of the matter, so everyone is clear on

what's involved in the actual proposed refurbishment and there is a lot of technical detail that's going to be presented that would be very helpful, I think to all.

But in terms of the new evidence and in terms of argument, we would ask that those parts of the presentation not be permitted.

CHAIRMAN: Mr. Coon, there is no way I'm going to attempt to figure out, nor is this panel, what is considered to be "new evidence" in these or what is argumentative in there. You are going to have to either tell us now what you think it is or alternatively when the panel is on the stand and giving its testimony, when it hits something you say, now, Mr. Chairman, this is where I object to this because it's such and such. You know, I can't figure out what is new evidence. And again, if it is rebuttal or in anticipation of what an intervenor might say, then that's okay.

MR. COON: Specifically with respect to new evidence, Mr. Chairman, I refer to slide 14 and slide 15. We would like the Board to consider.

CHAIRMAN: Okay. Those two in particular.

MR. COON: Yes, sir.

CHAIRMAN: Well I have some questions myself. There you have it. All right. In reference to those three, does

the applicant have anything they wish to say?

MR. HASHEY: Yes, I could address each of those, if you would like --

CHAIRMAN: Yes.

MR. HASHEY: -- Mr. Chairman.

CHAIRMAN: Yes, I think we will do it that way. Good.

MR. HASHEY: The first point on the province announcement, I don't think that is appropriate that anything we delayed. Obviously if something is announced that scuttles what is happening here then we will have to look at it if and when that announcement comes forward. I think the timeliness of this application has been made known in the evidence and in other hearings. It is timely and it is important that this matter proceed.

A lot of money is being spent on the development of a refurbishment plan before -- and has been spent to allow this hearing to proceed. And I think it's important that we do proceed, and we have come here as quickly as possible and until something is changed, I don't think we should vary. NB Power still has an obligation to serve the public, a statutory obligation. And this is part of it. And part of that process. And I don't think that anything that has happened to this time would suggest that there will be anything else but that obligation. That would require some significant amendments to legislation

and none has been seen, to speculate on that I think as to what the Premier and the current government might be doing, would be improper, I think at this time. That's my comment on A.

On B, the DSM suggestion, I think really the evidence has been provided, the Board required and requested some more evidence. An expert has been appointed to look at that, and I think that's the answer to that. And I think it will be addressed in that way. And questions can be asked to Mr. Marshall the hearing proceeds.

On the heritage asset that did flow from a JDI question. And it was felt that it was quite appropriate to bring all information to the Board that might be relevant to this matter. And as you know, this has been an ongoing market design committee matter. And that is -- that's an issue of concern obviously that might have some relevance to this and that's why that was included.

CHAIRMAN: Good. Thank you, Mr. Hashey. Any other intervenors have anything that they might wish to add concerning the three motions that Conservation Council has put? If so raise your hand. The Board is going to take a 10 minute recess to consider that.

(Recess)

CHAIRMAN: During the break I have been asked by some of the

participants that if you have a cell phone will you please turn it off while you are in the hearing room.

Now the Conservation Council's three motions. First one, consider delaying the proceeding. We don't believe that that's appropriate. We think we have to proceed. If in fact there is an announcement made at some point during the hearing then we will take time to consider exactly what the announcement says and we will go from there.

We think -- so therefore your motion number A is premature, Mr. Coon.

As to the second one, the cost in reference to DSM, again we believe you are premature there. The Board has retained the services of an independent expert in reference to DSM. Let's see what that expert has to say and if in fact he or she becomes a witness then you will be able to put the questions directly to that particular witness.

As to C, the slide presentation with frankness is designed to give an overview of the rather voluminous evidence that NBPower has filed with this Board and so to refresh our memories and to focus us. And certainly slides 14 and 15 -- now subject to NB Power's being able to point out to us that it resulted as a -- or it was brought forth as a response to an interrogatory by JDI,

then if in fact you can show that why we will change our opinion, but I mean otherwise you would be saying something that the entire market design committee report could be put in evidence before this hearing and not be new evidence. If anything comes out by way of examination vis-a-vis interrogatories, responses to questions, then it's part of the evidence of this hearing, but certainly what is set forth in pages 14 and 15 is not as a response to a JDI interrogatory as we see it now, and therefore those slides should be removed on the basis that what we wanted here was just an overview of the evidence that was -- which was filed and NB Power can therefore address.

So unless NB Power, Mr. Hashey, can point out where in fact it is, you know, 14 and 15 came up directly in response to interrogatories, then you can simply remove those two slides from your presentation today and they can be removed from exhibit A-16.

So that deals with those three. Does Mr. MacNutt --

MR. MACNUTT: Just exhibit 17, Mr. Chairman. I'm sorry. You are right. Exhibit 16 were the slides.

CHAIRMAN: Anything else, Mr. Coon?

MR. COON: That's all, Mr. Chairman. Thank you.

CHAIRMAN: Thank you. Any other intervenors have any matters they want to bring forth? Mr Hyslop?

MR. HYSLOP: Yes, Mr. Chairman. Two issues. One I think is to be assumed but just to have it on the record. When the report of the Board's expert relating to demand side management is filed, Mr. Hashey indicated NB Power would want time to review, I assume the same would apply to any of the intervenors that would want time to review and cross-examine on that. And the second is --

CHAIRMAN: That's a correct assumption, Mr. Hyslop.

MR. HYSLOP: Yes, thank you. The second issue relates to the delivery this morning of the plant performance agreement which was distributed at the beginning of hearings. I don't think it will result in any significant delay, speaking with Mr. Hashey, but we have not had an opportunity to fully review that agreement and we thought it might be appropriate perhaps to ask that no cross-examination of the panels start until the parties have had adequate time to review it. And I think adequate time would probably be whatever is left in today after the slide presentation and this evening, so that we would be ready to go tomorrow morning. I don't know the timing of Mr. Hashey's report but I expect it's going to go at least to the mid afternoon.

CHAIRMAN: Well frankly, Mr. Hyslop, you would not be cross-examining anybody this afternoon, I'm sure, if we follow

the order. So I mean if AECL feels strongly that way when we come to that point and/or anybody who -- including Conservation Council, then they can bring it to our attention at that time, but -- on that end of things.

MR. HYSLOP: Thank you, Mr. Chairman.

CHAIRMAN: Okay. Thanks, Mr. Hyslop. Any other intervenor? All right. Mr. Hashey, you can call Panel B, is it not?

MR. HASHEY: Yes, thank you, Mr. Chairman. I would like to ask that Mr. White probably, who would be the Chair of Panel A might sit at the table as well but not participate directly in the Panel B presentation. The Panel B presentation will be by the two witnesses, William Marshall and Sharon MacFarlane, and I would ask that they come to the table, and I guess their evidence should be sworn at this time.

CHAIRMAN: Yes, it should. Can you tell us why you want to start mixing up the panels?

MR. HASHEY: No, I'm not mixing them up. It's just a matter that Mr. Marshall and Ms. MacFarlane will give the presentation. Mr. White won't participate. He will just be there. He is really the chair of the Panel A. But if you don't want him there it doesn't matter to me.

CHAIRMAN: No, I'm just wondering why he was there. It doesn't matter to me. If you want to put him up that's

fine. Certainly go ahead.

MR. HASHEY: The evidence that I would swear at this time would just be the Panel B evidence and the only evidence that would be dealt with is Panel B.

CHAIRMAN: All right. Maybe since we are getting to the panels now you could introduce the c.v.'s for both panels.

MR. HASHEY: Yes, we have those c.v.'s.

CHAIRMAN: The c.v.'s for the seven witnesses for the applicants, two panels will be given the exhibit number A-18.

Go ahead, Mr. Hashey.

MR. HASHEY: Thank you. I would ask the panellists to take the stand please. We would just swear the two panellists on Panel B.

CHAIRMAN: For the sake of the record, just let the record show that the witnesses MacFarlane and Marshall were sworn at that time.

(Panel Sworn)

MR. HASHEY: I think it would be better if we reduced the lights a bit, Mr. Chairman.

CHAIRMAN: I have done my part, Mr. Hashey.

MR. HASHEY: Actually the presentation will follow exactly the presentation that is in A-16. Mr. Marshall?

Take a minute to reduce this one light that I think is

cutting down on the screen. We could move ahead while that is being done I think.

Would you like us to proceed, Mr. Chairman? I think we should. Yes, Mr. Marshall? Thank you.

MR. MARSHALL: Yes, Mr. Chairman. We are here to overview the evidence of Panel B on the Point Lepreau Refurbishment Project. The evidence will be provided by myself.

And I will be dealing with the Load Resource Analysis which outlines the need for the project with the Integrated Resource Plan which outlines the options and the economics and then a detailed comparison of the Refurbishment Project with natural gas.

And Ms. MacFarlane will be looking at the updated financial projections and a detailed financial comparison of the project with the natural gas option.

So first the Load Resource Analysis. And you can see on this chart the bars on the chart represent the requirement, the capacity requirement year by year. It includes all firm contracts out of the province plus all firm load in the province plus a reserve requirement of 20 percent reserve of the largest unit.

The solid line across the top represents the generation capacity resources available to supply that requirement. And you can see that out between 2006 and

2007, with Point Lepreau not available and the plant retired, the solid line drops significantly and is below the bars for the rest of the period. It is about 300 megawatts short early on and goes to about 428 megawatts short by the end of the period.

One point. This chart only shows the capacity requirement. In addition to having sufficient capacity to supply the load, we have to also be cognizant of the fact that Point Lepreau is a baseload generating facility that produces a significant amount of energy, roughly 25 to 30 percent of all the energy consumed in the province.

And so in addition to just the capacity requirement we have to look at the economics of providing that replacement energy as well.

In order to do that we looked at a number of options. So this particular hearing deals with the economics of the project. Clearly the feasible options are refurbishment of Point Lepreau.

But in addition we looked at a number of alternatives, demand side management which I will discuss in a little more detail in a minute.

In addition to that --

CHAIRMAN: Go ahead, Mr. Marshall.

MR. MARSHALL: Again we looked at a number of feasible

options in addition to refurbishment of Point Lepreau. We looked at demand side management and a number of supply side options, new natural gas combined cycle units, a new Orimulsion unit, renewable generation from wind and small hydro and combustion turbines.

On the demand side management, in the Load Forecast Hearing it was a point of some controversy. And as has been discussed earlier today, there is an expert opinion being solicited by the Board. And they are reviewing all of the evidence. And there will be a report coming in.

I just want to overview the information that is available. We have done the demand side management. Essentially we have to look at this. It is a three-step process. And part of the argument in the Load Forecast Hearing and the subject of this hearing is understanding exactly what that process is.

The first step is to do a screening analysis of what is the possible demand side management available. That has been done and submitted in the Load Forecast Hearing. It includes all of the energy efficiency options as well as natural gas fuel-switching.

But it was done without any incentive payments, what happens naturally, and it was done in the Load Forecast Hearing to verify or to confirm that what was assumed in

the load forecast is reasonable.

The second step of a demand side management analysis as an option for a power supply plant is to then do an economic comparison integrated into the existing power system with all the resources available. That is the subject of this hearing.

And in order to do that we have developed blocks of DSM, four blocks of 110 megawatts each at different prices based on the cost of those blocks. Those four blocks are reasonable projections of DSM based on the screening analysis and constitute about 80 percent of all the economic DSM that was identified. And by economic I mean all DSM that has a benefit cost ratio of .9 or higher.

So we have used simplifying assumptions that actually favor more DSM than what may be actually cost-effective. These options are then available to compete with the power supply options in the integration analysis.

Now the third step of a DSM evaluation would be following the economic comparison integrated with the system, you come up with what DSM is selected. You only then go to the third step which is to design specific programs and determine, based on the amount of money you have to spend, how much incentive you can then pay in order to achieve what is economic.

As a result of the Integrated Resource Analysis the plans came out that the first option for 2006 is refurbishment of Lepreau. The second was a new Orimulsion unit. And the third was natural gas.

But beyond 2010, when there are additional requirements as load grows out in the system, there were DSM and renewable resources that were the economic choices beyond 2010. But they were not sufficient to replace Lepreau, the Orimulsion or the gas unit in the 2006 time frame.

And just so that we can understand the economics of the three supply side choices, in the Integration Analysis, the very detailed computer model, you do not see all the details that go inside the model. A simplified screening analysis actually helps to illustrate the comparative economics.

And this chart outlines a screening curve. And to understand the curve, simply the lowest line on the curve is the lowest cost option.

Point Lepreau, being a base load facility operating in a high-capacity factor range, if you look on this chart you can see that everything from 65 percent above Point Lepreau is the lowest line on the curve. So on a screening analysis it is the lowest cost option. And we

would expect it to be the lowest cost in the integration, as it was.

Ignoring the next line which is a low gas cost option, if you go up, the next line on the graph would be the Orimulsion unit. The next line would be the gas combined cycle. So this chart backs up the results that were determined from the Integrated Resource Analysis.

But it is worthwhile noting the gas combined cycle at low gas crosses over against the nuclear plant at about 65 percent capacity factor.

Possibly when it is integrated in with the system it could be lower cost in combination particularly with the low cost option of Coleson Cove and the low fuel from Coleson, that combined with the gas -- with low gas prices could be a lower cost option. We will see that in a minute as a sensitivity analysis.

The third, in doing an Integrated Resource Plan we look at the need for reliable supply. We look at the economics. And we also have to look at meeting all environmental standards and requirements.

All of the plans do not have any issues in meeting sulphur or NOX requirements in the future. But carbon dioxide is another issue.

This particular chart shows our actual carbon dioxide

emissions from 2000. And then the carbon dioxide emissions from the three alternative plans out in 2010, 2015 and 2020.

You can see the yellow bars are the emissions from refurbishment which clearly are lower CO2 emissions than either of the other two alternatives.

But you can see from comparison to the dotted line on the chart what our projection of the targets would be under the New England Governors and Premiers Agreement. And again there is no hard and firm target yet. That is a negotiated position.

But our projection of those requirements would be the dotted line. And you can see that out in 2015 and '20 there is still a need to do some reduction of emissions even if the Refurbishment Project goes forward.

So how do we go forward to mitigate C02 emissions? Well, with the Refurbishment Project we can attain a reduction of C02 unilaterally by doing a redispatch of low emission resources and by cutting back on low margin exports. We can do that at a cost of about $15 a tonne.

If we go to the gas case, in order to achieve the reduction of CO2 required in the gas case we would have to reduce all exports. And we would have to purchase some additional credits out of a credit trading market.

Now if there is a credit trading, emission trading market and the credits can be purchased at a lower cost than all of the exports, then we would purchase credits and do the least cost option to make supply.

If we have to reduce all exports the cost per tonne under that case could go as high as 50 to $60 a tonne with some of the exports. So clearly we would be looking at lower cost credit options to balance that.

If we go forward with a new Orimulsion unit we need another million tonnes over and above the gas case. It is absolutely essential that there be a credit-trading market. Because we would have to purchase additional credits over and above reducing all exports.

So it would be reducing all exports plus additional million tons of credits have to be purchased. Again that will depend on the cost of those credits in the market plus all the lost opportunity on exports.

Because of the difficulties of achieving C02 targets with the Orimulsion case we have focused on the gas case as the most viable option against Lepreau. The economics of the gas option without considering any valuation of CO2 credits is $234 million net present value. And that's in 2001 dollars.

With the CO2 credits included, and again C02 credits

included in this case valued at $15 a tonne at the differential cost of the CO2, the Point Lepreau option is $514 million less costly than the gas option.

We also did a number of sensitivities. And the sensitivities summarized on this chart and presented in the evidence are all those that were agreed to at the generic hearing last year, high and low loads, high and low fuel prices, discount rates, capital cost differences, export differences.

In addition we added two additional sensitivities, looking at a exchange rate and looking at a reduced capacity factor from that projected. The point here is that, if you look down the column without CO2, we can see that that low gas case at $3 is more economic than the Refurbishment Project.

It is important to note that, unlike the Coleson Cove case where the economics are extremely compelling, and Coleson Cove is the lowest cost for all sensitivities and almost all stress cases, in the Lepreau case this a little closer to normal type economics of comparison of projects.

There are some sensitivities which are -- where an alternative may be lower cost. And combinations of those sensitivities also may make it lower cost.

However on the whole, when you look at all of the

evidence and all of the economics, overall the conclusions of our analysis are that a refurbished Lepreau will provide a reliable high quality source of energy and capacity.

And it is the preferred option environmentally because it has zero emissions. It is our view it is essential in order for us to meet the climate change C02 targets that we believe we are going to have to live in in a constrained carbon environment as we move forward into the future.

And refurbished Point Lepreau is the least cost option under our projected conditions and under most of the sensitivity cases. So the bottom line is that the refurbished Lepreau is the preferred option. And it is submitted to this panel for recommendation to proceed.

And I will just -- just close your eyes everybody, because these two slides are stricken from the record. And I would ask Ms. MacFarlane to continue from this point.

MS. MACFARLANE: I would like to start by saying of course that investment decisions are made on the basis of economic analysis, not accounting analysis. But it is important in this case to look at the impact of the proposed refurbishment project on NB Power's financial

statements because it tends to be a year to year forecast of those financial statements that impacts rates.

To that end then the economic analysis did indicate that the least cost acceptable alternatives and acceptable in meeting the reliability considerations and the environmental considerations, the least cost acceptable alternatives were demonstrated to be refurbishment of Point Lepreau and building a new natural gas plant. And it's those two alternatives that we have done financial statement impact analysis on for purposes of the evidence.

The analysis in the evidence builds off the business plan and financial projection that was completed in March 2001. NB Power will next be updating its financial projection after the decision by the province and after the decision by this Board and its own Board of Directors on Point Lepreau. But we have taken the financial projection done in March 2001 and updated it for the latest project estimates. And I will point out that the business plan in March 2001 was based on rates in existence at that time. We chose not to put rate increases into the long term forecast so as to focus analysis on the projects themselves and not on any rate implications.

And secondly, I would point out that the projection

goes out to the period 08/09 so that we can look at one full year of operation after the completion of the Point Lepreau refurbishment project.

In both options, the refurbishment of Point Lepreau and the building of a natural gas case, NB Power's debt will increase. In both options internally generated cash flows are not sufficient to pay for all of the required investment and external borrowings will be required.

And in both options the debt will peak at about 3.6 billion. Now in the natural gas option that happens in the year 04/05. In the Lepreau option that happens somewhat later in the year 06/07. But in both options our debt peaks at 3.6 billion.

The evidence demonstrates that the Lepreau refurbishment option over the forecast period and out into the future has stronger net incomes, stronger cash flows and a stronger ability to service the debt.

I want to start by looking at net incomes and we look at the year post refurbishment, one full year of operation after refurbishment, so that we can look at a full operating situation for both alternatives.

In that year net income under the Point Lepreau refurbishment option would be $10 million. Under the natural gas option sharing all of the same base economic

and operating assumptions except that natural gas would be the alternative here, we would have a net loss in that year of $16 million. So Point Lepreau provides a net income advantage in a year of full operation of $26 million.

So cumulatively in the year following the completion of NB Power's major refurbishment -- pardon me, I should show you the cumulative. Cumulatively we have over the forecast period out to 08/09 net incomes from the refurbishment option of 109 million. And cumulatively over the period of the plan for the natural gas option, we have net losses of 345 million. So the cumulative difference over that seven year period is 454 million.

Conclusion being that cumulatively and in the one year following the plan, the completion -- following the completion of the major refurbishment projects, Point Lepreau has provided the highest net incomes and consequently the least pressure on rates.

If we move to look at project spending, debt and debt service. Point Lepreau, the project spending is 845 million. The alternative natural gas would be 436 million. But we don't just look at the capital, we look over the life of the project at the capital and the operating costs.

Total debt at the one year following completion of Lepreau under that option would be 3.49 billion. Under natural gas, which is now several years after the completion of that project, it would be 3.22 billion. But what is most important here is the operating cash flows.

Let's start first by looking at the magnitude of the operating cash flows. They are higher under the refurbishment option than they are under natural gas, which would mean that five years subsequent to this point into a 25 year life, we now see Point Lepreau's debt lower on a go forward basis than natural gas. But more important than the quantity of those cash flows is the quality of those cash flows.

Under the refurbishment option those cash flows are generated by a plant that we believe will be reliable and will have sustainable and predictable operating performance completely within the control of NB Power. The issues that have led to difficulties with Point Lepreau's performance in the past has been shown in the evidence to be related to those issues that are being addressed in the refurbishment. And we expect sustainable, predictable and high levels of operating performance after refurbishment.

The natural gas case on the other hand, those cash

flows are completely tied to the price of natural gas which is outside of NB Power's control dictated by the world markets and subject to high levels of volatility. So it is not just the quantity of cash flows being higher in the Point Lepreau case but it is also the quality of those cash flows being more predictable and sustainable in the Point Lepreau case that's important in this matter.

That's true as well when we look at interest coverage. The interest coverage for Point Lepreau in 08/09 would be 1.03. In the case of natural gas it would be less than 1, meaning that our capacity to meet financial commitments under that alternative is lower. In fact less than sustainable.

Again we want to look at the quality of these numbers because the quality of the projections for the Point Lepreau refurbishment we believe is much higher because it is within our control than is the case for natural gas which is subject to the volatility of the world markets.

So in conclusion on this slide, in the year following completion of the major refurbishment projects, the Lepreau refurbishment alternative provides a stronger measure of liquidity through operating cash flow and a stronger measure of NB Power's capacity to meet financial commitments through interest coverage.

You saw in the last slide the debt at the one year after Point Lepreau's completion will be 3.49 billion and the obvious question is can NB Power sustain that level of debt. We believe we can because our cash flows have been strong historically, and we have demonstrated that, and they will continue to be strong.

Let's start by looking at history. NB Power's debt has already been at the $3.4 billion level. It peaked in 1995 at 3.425 billion following the completion of Dalhousie and Belledune. And over the five year period to 2001, NB Power's cash flows generated a billion dollars that was applied first to covering annual ongoing capital, all of NB Power's capital expenditures during that period were covered by operating cash flow. And then beyond that a further 600 million was applied to debt reduction. So we end -- the period ended 2001 with our debt at 2.9 billion. Strong cash flows supporting the debt over that period.

During that same period our debt service cost defined by some -- declined by some $50 million annually. So then we look beyond the historic period into the forecast period. Over that period of time NB Power will invest some $1.6 million in major capital projects. Over 50 percent of that investment will be financed by internally

generated cash flows.

At then finally post refurbishment, we believe that cash flows will be stronger, more stable and more predictable than they even have been over our past five year history. Because we will have eliminated our exposure to price volatile heavy fuel oil through the Coleson project. And we also will have ensured that Point Lepreau operations are more predictable and more reliable through the work done on equipment performance and human performance leading up to and in refurbishment.

The cash flows as projected in the business plan are based on existing rates. And we have demonstrated that existing rates do provide sufficient cash flow to service current and projected debt levels. So then the question becomes is there any pressure on those rates? Are those rates competitive? Are they sustainable? Is in fact there room for upward movement in rates?

Our rates are competitive in the region in which we operate, which is the Maritimes and Northeast. NB Power's rates are the lowest of any Eastern Canadian utility save Hydro Quebec which of course operates off of a hydro generation base system.

Our rates are very competitive in the Northeast US. And we have spoken before about the importance of our

ability to compete in those export markets.

Dominion Bond Rating Service in their 2001 report on NB Power noted the following, and I'm quoting. "While NB Power's rates are above average in comparison to other Canadian utilities, partially due to the thermal base nature of generating capacity, the variable cost of 3.9 cents per kilowatt hour in Canadian dollars, allows NB Power to compete effectively in the New England region where electricity prices range between 8.7 cents and 15.9 cents per kilowatt hour in US dollars."

Our rates are competitive both in our own region for in-province rates and moving into our export markets and we believe that there is also room for upward growth in those rates for that reason.

Finally the issue has been raised about NB Power's capital structure and its sustainability. It is not the subject of this hearing but it may be considered relevant by some members of the panel because NB Power is 100 percent debt financed and we are planning -- or we are projecting that our debt will increase.

NB Power's capital structure of being 100 percent debt financed is not desirable, certainly not desirable from an investor point of view, but it is manageable from a crown corporation point of view. It is manageable because our

debt levels can be supported by cash flows based on existing rates.

NB Power would like to have equity but let's recall that equity in a crown corporation is only available through retained earnings. There is no investment by the owner. It can only come through generation of higher net incomes. And that would require rate increases.

Today we are limited in the amount of our rate increases by legislation that limits our interest coverage cap. In 2002/2003, as an example, our rates lead to a net income -- a projected net income of about $30 million which provides us with an interest coverage of 1.12 times. We are limited to 1.25 times. We can only raise rates by a further 4 percent under the existing legislation, so it will be difficult, a challenge for NB Power in the future to have net incomes that will lead to a rapid rebuilding of its retained earnings. But that is a topic for another day. Nonetheless, to answer the question can NB Power support the debt, we believe, yes, because of the strength of our cash flows. Cash flows that are supported on existing rates which are competitive and sustainable and do provide room for growth. Our capital structure, which is a separate matter nonetheless we believe is manageable financed through 100 percent debt.

So finally in conclusions, compared to the natural gas alternative, refurbishment of Point Lepreau provides the higher net incomes, the higher cash flows and the stronger ability to service debt of the two options. The external financing required for Point Lepreau refurbishment can be serviced and Lepreau refurbishment remember is the least cost economic option.

Economics and accounting are two different fields but in the long term they do lead to the same conclusions. In the long term the least cost economic option will lead to the lowest rates.

That concludes my presentation.

CHAIRMAN: Thank you, Ms. MacFarlane. I think we will break for lunch and come back at quarter to 2:00.

(Recess - 12:15 p.m. - 1:45 p.m.)

CHAIRMAN: Good afternoon, Panel A. The Board has just a couple of preliminary matters to deal with. We indicated that we would take a look at the Board's calendar in reference to informal intervenors and when they would make their presentation.

The calendar is desperate. It looks like the first day that we could do it would be the 20th which is the day after we have concluded the hearing in these premises. However, during the hearing itself it may well turn out

that there would be a day or a half a day available.

So we are just going to have to play it by ear. But I think in fairness to everybody we will inform you by e-mail. If all of the informal intervenors are not present we will inform you by e-mail as soon as we do know and can set it down.

The second thing is that Hydro Quebec was not here this morning. But I understand that it is. And would they like to indicate who is here representing them?

MR. PAGEAU: My name is Rene Pageau.

CHAIRMAN: Okay. Thank you. Any preliminary matters from the applicant?

MR. HASHEY: Mr. Chairman, there is just one thing. This morning it seemed to me that we were about to deal with the presentation or the evidence of AECL. And between Mr. MacNutt and myself it sort of got discarded.

Do you want that dealt with as an exhibit? I mean, AECL are represented here. But it just seemed to me it was in the book. And we sort of backed off that whole thing.

CHAIRMAN: Thank you for bringing that to my attention. I think probably we should. And the question is do we have -- does AECL have a copy of that evidence available for the Board to mark, Mr. Miller? No. But the Secretary

does I guess.

Secondly while we are doing that, what about the witness Kugler?

MR. MILLER: I have the c.v. of Dr. Kugler for tendering with the Board as an exhibit.

CHAIRMAN: Okay. Well, if you would bring that up we will do both them right now. I must say, Mr. Miller, I have never seen prefiled evidence that was the form of slides before.

I mean, exhibit A-16 is by way of emphasis but not -- we would have a difficult time trying to figure out what was new evidence and what wasn't, wouldn't we?

All right. The prefiled evidence will be AECL 2. And the c.v. of Dr. Kugler is AECL 3. Good. Thank you, Mr. Miller. Thank you, Mr. Hashey.

Anything else, Mr. Hashey? Any other -- any of the intervenors, any matters? If not I will call upon Commissioner Dumont to turn down the lights.

MR. HASHEY: Maybe we should swear the panel.

CHAIRMAN: Let the record show that Panel A consisting of five individuals was duly sworn.

(Panel sworn: Jeanie McKibbon, Bill Pilkington, Rod White, Stu Groom, Rod Eagles)

MR. HASHEY: Then we should call on the Panel to give their

presentation, Mr. Chairman. Mr. White will lead.

MR. WHITE: Good afternoon. I will chair Panel A. And we will start off with the overview presentation. And then we will follow up with a more detailed presentation.

My name is Rod White. And I will give you a background on the Lepreau station. We will then follow with Mr. Stu Groom who will give a presentation on how Lepreau works, why it needs to be refurbished and how the scope of work for this refurbishment was defined.

Rod Eagles will provide project scope, schedule and cost leading to an execution plan. Bill Pilkington will identify the performance improvement plans at Point Lepreau and the long-term projected results of those plans.

Stu Groom will outline the decommissioning and used fuel management plans. And I will conclude with some remarks.

Point Lepreau went in service in February of 1983. It is a 635-megawatt capacity unit. And it is one of 11 CANDU 600 series of worldwide reactors, some of which are still in their construction stages, and many of which have been operating for a number of years.

There are at Lepreau about 700 full-time employees.. And in terms of annual direct spending in the province of

New Brunswick, the O & M budgets and the capital budgets on an ongoing basis at Lepreau represent around $95 million of input to the province.

Lepreau is the largest single unit on New Brunswick power system. It has the lowest fueling costs next to hydro. The fuel supply for this nuclear unit is indigenous to Canada. And therefore it has stability.

Lepreau also is available as a base load generating facility on a year-round basis, unlike hydro that requires water flows, and in the wintertime those water flows are very low, Lepreau is available on an ongoing basis to supply base loads.

If Lepreau is not functional and the requirement is to replace it with either oil generation, Orimulsion or coal generation. The replacement costs are usually in the order of half a million to $750,000 a day.

And that of course conveys the message that each day Lepreau is running, that is half a million to $750,000 worth of oil or other fuel products that we do not have to purchase, and therefore we don't have to -- our ratepayers are not subjected to those ongoing costs.

From an air emissions point of view, Lepreau has zero air emissions in terms of SOX, NOX and greenhouse gases. It also does not have some of the other things that are

related to other thermal units like mercury issues and particulate issues.

From a historic point of view Lepreau was originally planned to run at an 80 percent capacity factor over about a 30-year time frame. Since 1983 when it came into service until 1994, Lepreau has operated at 93.3 percent capacity factor.

From its inservice date in 1983 up until December of 2001 it had operated at a level of 83.6 percent capacity factor against the original planned 80 percent. And if you took that 83.6 percent and you adjusted it for the effects of fuel channel and feeder issues, which is one of the prime drivers for refurbishment, it would increase it by another 4 to 5 percent to 88.1.

If we look at the cumulative capacity factors, the green on the left represents the actual cumulative capacity factor to 2002. And I said in 2002 the total inservice capacity factor was 83.6. And then if we add to that the period of time going out to the outage in 2006 when it's out for a year and a half's outage, and then its operation at the predicted 89 percent capacity factor for the remainder of its life, you can see that the pink curve represents the long-term cumulative average of Point Lepreau out to 2032. And it is a little bit above the 80

percent long-term life capacity factor that we are predicting.

Now this slide looks at the US nuclear unit performance since 1980. In the US the units started out with capacity factors that were in the 60 percent range where Canadian reactors were running at about 90 plus percent range.

And the predominant differences here are the Canadian reactors have online fuelling. And the US reactors have to shut down in order to execute refuelling of their units.

Additionally over time, the US units have learned from the issues of Three Mile Island about putting fundamental programs in place that deal with maintaining equipment and looking after human performance issues. And you can see that in 2000 and 2001 that the median capacity factor of the US reactors is now operating at above the 90 percent range.

Their strong performance is a demonstration of the lessons learned in the industry and built into their capabilities. And we in fact are able to take advantage of many of those lessons today.

Some of the keys to successful nuclear power operation and nuclear unit operations, one of the fundamental ones

is in human performance, and that is the ability to do correctly the tasks that you need to do each time without causing events and errors, and building enough roadblocks in place that if you have small events or errors they do not impact your operation.

In the human performance area we need to incorporate the best industry practices. And we have good examples from our neighbour to the south that we are able to bring that they have learned over long periods of time.

One of the key ones is timely use of operating experience. And the nuclear industry has a tremendous sharing network of these experiences. And that allows you to forecast potential operating issues and get at them before they cause you outage issues.

Secondly in the human performance area, the ability to attract, train and retain licenced staff and dedicated, highly skilled staff is a very important aspect. The challenge of licencing operators takes anywheres between five and nine years to get certified people. And it is a challenge not only to achieve it in the first place but the continuing examination process to maintain that level of proficiency are also challenging.

And the last is, in the human performance area to employ processes that are effective and allow, in a very

complex function, employees to effectively carry out their functions.

The second area of successful nuclear operation is in the area of equipment performance and the ability to upgrade aging equipment, which is the topic of our discussions today in terms of refurbishing Lepreau, upgrading equipment that will not last for the extended life of the station.

In doing that we need to focus on system health monitoring, the process systems in the plant, understanding the degradation mechanisms and putting in place effective and predictive maintenance programs to address these problems -- these problems areas before they manifest themselves.

What are the trends in life extension and refurbishment? In Canada three of the utilities are going down this road. Hydro Quebec is looking at the refurbishment of their CANDU-6 unit. And they are about a year and a half to two years behind us in their timing processes.

In Ontario, Ontario Power Generation is working on returning the Pickering A units to service. And they are currently forecasting that the first unit that will be returned to service there will be either in the last

quarter of this year or the first quarter of next year. And that is four units that they are working on to return to service.

And in Bruce, Bruce Power are looking at returning Bruce 3 and 4 units to service. And they are currently undergoing engineering work and inspection and analysis work in determining the total scope of work that they would need to carry out in terms of returning those units to service.

Within the United States, the United States licencing program is slightly different than the Canadian program. In the US you get a 40-year licence as opposed to in Canada. Currently they are two-year licences. Although the regulator is looking to lengthen the licence period.

In the US today, eight stations, eight units have been granted licence renewals of 20 years. That takes them up to a 60-year lifetime frame. 15 applications are currently in front of the Nuclear Regulatory Commission. And 26 more are expected by 2006.

Richard Manure, the Chairman of the Nuclear Regulatory Commission, says he fully expects that ultimately 85 percent of the running units in the US will seek life extensions on their licences.

The keys to successful refurbishment we believe are

properly managing the risks that go with refurbishment. You need to have an appropriate contract strategy, properly understand the work to be done so you can develop an appropriate scope, build as much of that package as you can and do firm price commitments, understand the regulatory environment going forward so that you can predict the regulatory risks and costs, and then applying to your project an appropriate level of contingency funding.

NB Power has carried out what we call a Phase 1, which is a scoping, definition phase of the work to execute refurbishment. We underwent a comprehensive condition assessment process to define what needs to be refurbished and when it would need to be carried out. And as a result of that you then establish the costing relative to that and the schedule.

We have looked for the involvement of technical capabilities at the outset in terms of defining the work to be done and also in terms of executing the work. And we have involved our original designer of the nuclear steam supply plant, Atomic Energy Canada Limited from the outset in this definition of the work to be done.

We have developed a good understanding of the actual scope of work to be done, how long it will take and what

the resources and costs would be. And we are in the process of negotiating contracts for the conduct of that work. And the last of those was presented to you this morning.

An important part of the scope definition is understanding the regulatory environment that we are operating in today and what the regulatory environment would be like in the future, and carrying out a series of discussions with the regulator so that they understand and we understand, from a common point of view, what work would be necessary.

We started the discussions with our regulator almost two years ago now. And they have been following all of the work that we have been doing since then in an interactive process.

We have created a licencing framework document to define the work that the regulator would need to assess and approve. And we have in fact received from them in December what we call a comfort letter, a letter outlining their basic views of the work to be done and that they are on the same common footing as we are in terms of the amount and the level of effort that would be required.

Additionally an environmental assessment is required in our waste site under the Canadian Environmental

Assessment Act due to changes in the operating licence to construct facilities that are necessary to receive retubing wastes.

And the CNSC is the regulatory authority responsible for conducting that assessment. And in fact last week they had the hearing on the scope of that environmental assessment. And we should have a decision in about two or three weeks.

CHAIRMAN: Would you bring us up to date on what we all read in The Telegraph Journal this morning? It sounds to me as if the Panel is not prepared to accept the recommendation of staff in the comfort letter. Or at least there are certainly are separate thoughts in reference to the matter.

Perhaps you could explain what your understanding is of what went on?

MR. WHITE: Well, over the past year and a half we have worked with the nuclear regulator, recognizing that in Point Lepreau an environmental assessment will be triggered by the Canadian Environmental Assessment Act.

It's particularly triggered because the waste site licence -- and we have a separate licence for our waste site from the reactor operating licence -- that waste site licence is triggered by a change in the licence that is

necessary in order to construct additional facilities to receive the waste from the refurbishment as well as to receive ongoing waste over the extended life of the plant. The operating licence of the plant is not triggered under CEAA from a legal point of view.

The process is that the regulator that is in charge of conducting the environmental assessment process, in this case the Canadian Nuclear Safety Commission, is charged with gathering the scope of work that is believed to be needed to define the work to be done -- or define the scope of work to be done. And they receive input from all the government departments as well as a regulatory assessment is required under the New Brunswick Clean Air Act.

So the Department of the Environment and local government of New Brunswick and the CNSC have decided to harmonize their process and work together. And so they created a guideline for the environmental assessment.

That guideline was aired in front of the CNSC Commission on Wednesday of last week. And that process provides for approval of the guideline so that then the CNSC can go out and complete the environmental assessment.

And most of the environmental assessment they will second to New Brunswick Power to execute. And then they

will write a final screening report around that and present it back to their commission in about a year's time frame.

The same as this panel is doing, the CNSC Commissioners had a thorough airing of that issue and wanted to ensure for the public record that all pertinent questions were asked and answered to support the decision that they would make.

CHAIRMAN: As I understand it that is an environmental assessment guidelines that will -- in reference to the storage facility, not the project, is that correct?

MR. WHITE: That's correct. The limit of the environmental assessment guidelines are relative to the storage site. They include the source of the waste that is going to the storage site, which is really the refurbishment of the reactor itself.

They also include for the transportation of that waste from the plant to the storage site. And they include any incremental effects of the ongoing operation for extended life to 2032.

So it is that background that the Commission was making a decision as to whether that level of scoping of environmental assessment is appropriate.

CHAIRMAN: Good. Thank you.

MR. WHITE: Now Phase 2 of the project is the design and engineering phase which deals with the development of detailed engineering, development of actual waste site construction and the development of on-site temporary buildings and structures necessary to carry out the refurbishment work.

There are four more years of preparation work before we actually start the outage in Lepreau. The CNSC will remain involved throughout this period assuring that we satisfy the ongoing licensing requirement for the station. Most of the work that will be executed during refurbishment is work that has been done before. And the scope of the work for refurbishment is much smaller than the original construction and is certainly much better defined than original construction in that all of the design work will all be completed prior to us actually starting execution of the work, where in the original construction of Lepreau much of the design paralleled the construction.

Phase 3 is the actual implementation, the outage work. And we have engaged AECL as the general contractor to coordinate the retube work to be the general contractor for the refurbishment and to also integrate other station work activities with the overall refurbishment plans.

They would execute the retubing work and they would execute the refurbishment scope.

NB Power's project management team provides oversight to all of the AECL's work. It coordinates the NB Power's scope of work and it manages the interface between the station and the AECL work.

Now what leads to effective execution of work and why did we engage AECL in this? We believe that in the changing environment due to deregulation and consolidations and divestitures that are going on particularly in the nuclear industry across North America, that as a single unit utility, a single nuclear unit utility, we would need access to long term technical and engineering skills in order to successfully run Lepreau for an extended life. And we believe that we could do that through some form of a partnering relationship.

We wanted a method to share both the refurbishment risk and the operating risk of the station. We looked at other ways of doing this either through lease purchase agreements with other suppliers and they were less attractive to us in an overall package than what AECL offered. AECL were the only one who were prepared to offer a guarantee on long term operation of the station.

AECL is the CANDU designer. And they are the current

constructor of CANDU plants in the world. They have extensive technical experience relative to the CANDU plant and the technical issues on an ongoing basis. So we believe that they were an appropriate body to form a relationship with to execute a refurbishment and support the technical running of the station for the long term.

Another element that is important to the refurbishment work is of course stability of labour. Under the Industrial Relations Act of New Brunswick there is an ability to put in place labour stabilisation agreements that predefined wage increases and benefits in return for no strike clauses and no lock out clauses.

These types of agreements have been used successfully in our projects in Millbank, Belledune and Dalhousie. And we are currently in the process of working with both the trades and the construction associations to negotiate such agreements on the Lepreau project. And equally, that stabilisation equally applies to the Coleson project as well that you have already heard.

With AECL we have identified four contracts that are part of the refurbishment package. The first one is really around retubing itself. And retubing is talking about replacing the heart of the reactor, the engine of the plant, the pressure tubes, the Calandria tubes, the

end fittings, the feeders and the repository for these waste -- radioactive waste products that would need to be stored in our waste storage facility.

As part of Phase 1 we have conducted detailed modelling of the actual processes of carrying out this work on a computer graphics modelling and already developed a number of tooling. And more tools will be developed in terms of executing the retubing work in a fast retube model.

The second contract is refurbishment for the remainder of the station. We have established a contract with AECL to be the general contractor for the entire outage. They will carry out the detailed engineering, the procurement and the installation of the define scope of item. They will also carry out safety analysis in support of work that we need to place in front of our nuclear regulator. And some of the components that need to be worked on beyond the reactor include replacement of the shut down system computers, replacement of turbine controls, rewinding of turbine generators, stature and rotor.

The third agreement is a plant performance agreement that was recorded into evidence this morning. This agreement warrants the plant operation for the 25 years after its return to service in late 2007. It does that on

the basis of an 80 percent capacity factor. And it provides a clear and overriding incentive to refurbish and support the station in its operation for the long term.

We have a fourth agreement that is under negotiation at this point in time which is what we call CANDU Operation Support Services Agreement. And it is around providing technical and managerial support in the post-refurbishment stages. And this one gives us access to key skills and resources.

Now in the area of performance guarantees and warranties, a number of the interrogatories seem to assume that guarantees and warranties from AECL should fully protect NB Power under all eventualities. Well, no supplier provides that kind of protection in the power generation business.

We believe we have an attractive set of warranty packages that we have negotiated with AECL. And they are part of the detailed agreements that I am sure we will discuss during the course of this hearing.

Why is it that we are before the PUB at this time? Phase 1 of this project was necessary in order to properly define the work to be done to refurbish Lepreau, develop the appropriate schedules and timing for that, develop the costs and then put them together in a business

case to see if this all made appropriate economic technical and environmental sense.

As soon as we completed that work late in December then we filed that information in front of this Board as the most attractive option for generation supply in this province on an ongoing basis.

NB Power believes that it is prudent to start the outage in April in 2006 due to the technical issues related to the pressure tube. And the requirement for us to supply reliable service in this Province and base load energy make it imprudent not to move forward with this on a timely basis.

This shows an overview of the schedules of the various phases. Starting on the right hand side we believe that the pressure tube life will limit the operation of Lepreau and will run out in this 2006 to 2008 period. And Mr. Groom will talk about that in a little bit more detail. And therefore it is prudent to be ready to start an outage in early 2006. And we have scheduled an outage for 18 months from April of 2006 to September of 2007.

In order to get prepared for that outage in 2006 it takes about four years to carry out the detailed engineering, build the temporary structures, build the waste storage structures, order and receive all the

necessary equipment. And therefore a decision is required in mid-2002 in order to be able to achieve a 2006 outage date.

And of course we have spent the last two years since February of 2000 defining the scope cost and schedule and developing the business case.

I will now turn the presentation over to Stu Groom to detail a little bit more about the station.

MR. GROOM: I give you a little overview about how Point Lepreau works.

Let's talk about what are the issues that bring us to you today to tell you why the plant needs to be refurbished, and then provide a synopsis of some of the highlights of Phase 1 work on how the project scope was defined.

In terms of the overview on how Point Lepreau works, what we tried to do here in a simple schematic is to talk about some of the key elements of the reactor system, talk about how we get the fission energy out of the core, use that heat to generate steam and to use the steam to run the turbine, and to use the energy from the turbine to operate the generator to generate the electricity.

From the conventional point of view the part on the turbine and the generator is very much like most

conventional thermal plants. The part that is unique about Point Lepreau is the reactor and the fact that we used uranium in the reactor core to provide the heat.

Another feature that is unique about Point Lepreau are the built-in safety features because of course safety is a paramount issue with these plants. And we have redundant safety systems which provide defence in depth.

One of the features you can see here pertaining to that is the containment structure which is the building in which the reactor and the nuclear steam supply systems are housed. It provides a barrier against release of radiation into the environment, as do the piping which contains the coolant that extracts the heat from the reactor, provides another level of containment and as is the fuel.

We have over here a fuel bundle which I will refer to in a minute, but it represents one of the first levels of containment.

So the fuel bundles containing natural uranium fuel sit inside the reactor core. The nuclear fission process generates heat which then is extracted into the circulating coolant. This coolant is heavy water. It's pressurized at about 10 megapascals, so that's roughly about 1,200 psi. The water exiting from the reactor is at

about 310 degrees centigrade.

So this hot water circulates up into a boiler. The boiler cools the water. The cool water then flows back into another channel where again it's heated up, flows over into the other boiler where again its heat is displaced into the boiler and back.

And this then continues to circulate around this heavy water inside the reactor vessel.

In the boiler itself on the secondary side it's filled with ordinary water. This ordinary water as it heats up generates steam. The steam then exits the containment structure, flows into the turbine, spins the turbine. The spent steam is then condensed. The condensing fluid that we use is sea water. It's extracted from the Bay of Fundy. It passes through and cools the steam into condensate which is then pumped back into the containment and into the boilers again to be recirculated.

So the key elements then are the fuel, heavy water used to extract the steam and steam through the balance of plant.

I have taken a more detailed view of the reactor vessel itself because I want to explain to you some of the features inside the reactor vessel that have been the source of our current problems.

The first component I would like to draw your attention to is the reactor vessel itself. It very much looks like a tank. We call it the Calandria vessel. This tank has on it tube sheets which make it behave like a heat exchanger, and through those tube sheets we have a series of tubes that run horizontally through the vessel. These tubes are called the fuel channel assemblies. It's into these tubes that the uranium fuel is inserted into the heart of the reactor. The coolant, the heavy water, it flows down these pipes called feeder pipes, and as it flows in along the tube it's expelled at the other end. Or in some cases it will flow in this direction depending on which channel you are looking at.

In the heart of the reactor where the uranium is being fissioned is a very hostile environment insofar that it's got coolant running at temperatures around 310 degrees Centigrade, it has high radiation fuels and high neutron flux. These neutrons have the capacity to change some of the features of the materials into which they interact. In the case of the uranium of course they cause the material to fission. In the case of the hot pressure tubes it can cause them to swell in volume, so that they tend to with the passage of time, taking usually about 25 to 30 years, they grow in diameter and they can grow in

length. They can also as a consequence of this effect sag.

So we have an effect that these tubes can slump down, they can grow actually and change some of their properties.

One of the things we have to be concerned about of course is that the clearance between some of these horizontal devices which are used to control the reactor power may come in contact with the Calandria tubes with the passage of time, and that's a feature we have to be cognizant of and monitor for.

So what I have done here is we have taken a section out of a pressure tube to give you an example of up closer what some of the features are and you may wish to look at this later. But inside you will see that there is a pressure tube, and a Calandria tube and a spacer ring. And the intent is that this fuel bundle would slip in along with -- so that there would be a total of 12 such fuel bundles in a channel. Each of those fuel bundles is about half a meter long. So the full fuel channel length is about six meters or about 20 feet. So the distance between this Phase and the other Phase is in the order of 20 feet.

Let's look in a little more detail at an image of the

fuel channel. The section that we have here represents then a piece of piping that runs between the tube sheets inside the reactor. To the end of this pressure tube is connected a device called an end fitting. This mates up with our robotic fueling machines which can routinely insert fuel down the length of the channel. They also provide a medium into which the coolant can flow through this device here called a feeder connection, along the pressure tube and exit from the other feeder at the other end.

Again some of the features you see from the example I have here, this outer tube called the Calandria tube which represents what I have here on the model, the inner tube, the pressure tube and then these spacer rings. And there are normally four of these spacer rings located along the length of the pressure tube, and their mission is to ensure that there is a gap between the pressure tube and the Calandria tubes at all times.

Well what have been some of the challenges we have run into? Well as I mentioned earlier, as a consequence of this effect of the neutrons with their pressure tubes, the pressure tubes tend to grow. There is a bearing in the end fitting that allows for this actual movement and we are coming very close to the end of bearing allowance

in terms of actual growth on some of the channels.

In addition we found that some of these spacers in service have had a tendency to move from their design location. When they are not in their design location that means that this pressure tube has a chance to slump down and come in contact with the Calandria tube.

Now on the outside of the Calandria tube we have cool heavy water which is normally at a temperature around about 60 to 70 degrees Centigrade. This hot pressure tube when it contacts that cold pressure tube at the contact location can pick up hydrogen, and if sufficient hydrogen is picked up the material can become quite embrittled and there is a risk of cracking taking place at the cold contact spot.

So the phenomena, we have actual movement of the tube, sag of the pressure tubes, movement of garter springs and potential with contact and accelerated hydrogen pick-up.

What do some of these phenomenon mean in terms of timing? Well from the point of view of the sagging of the pressure tubes and coming in contact with horizontal devices, we reckon that around about the year 2005 we have a chance that we would have our first potential for contact. We have the capacity through maintenance to adjust the horizontal devices and recreate clearance and

get additional operating time from that phenomenon.

Pressure tube contact with the risk of blister formation, we first recognized that there was a problem with this in the early 1990's. In 1995 we carried out a big campaign to do SLAR, spacer location and relocation. And this was intended to buy us more operating time to get to at least 2008 which we are pretty well on target with. Another problem we have with the volumetric expansion of the pressure tubes is diametric strain. In this case the pressure tubes can grow in diameter until they come in contact with the pressure tube. And this provides an opportunity to bypass the coolant flow around the fuel bundle and would require less -- us to derate with power density.

Channels coming off bearings as I mentioned before due to actual growth of the pressure tube, deuterium uptake and then last fracture toughness problems which we think would manifest themselves sometime after 2011.

So the driver that is bringing us to the table here at this time is primarily our concerns about hydrogen pick-up and pressure tube blister formation.

In addition to the challenges with the fuel channels as I mentioned the feeder pipes which take the coolant from the fuel channels on the exit end have also been

showing signs of flow assisted corrosion as a consequence of the high velocity of coolant that is flowing through them. We think that the rates at -- these feeders incidentally are generally about two inch carbon steel pipe. They are the same type of pipe you find in any conventional refinery or any power plant.

We think that the thickness allowances we have in the existing pipes will last beyond the year 2005. We have some feeders though which we will have to do replacement of. We have two which we reckon we will have to do in the outage of 2003. The job is really cutting the carbon steel pipe out and putting a replacement piece in. And that would require four collateral feeders. So a total of six feeders would be required to be done in 2006 -- 2003, and another six in 2005 outage. And we have the technology to do that, we have done it in the past and are confident that that maintenance can be carried out.

Another problem we have seen at Point Lepreau with feeders has been cracking. We have had some feeders show -- we have had a total of four feeders show evidence of cracking. That's four out of 780 feeders. And those again we are addressing through an inspection and maintenance program which we think will be effective.

Some of the components would reflect, replace the

pressure tubes, and the fuel channel and fittings. The connections between the end fittings and the feeders will be changed. The fuel channel positioning assemblies. The fuel channel annulus spacers, visible links. The calandria tube inserts. The calandria tubes inserts or an insert used to hold the calandria tub in place in the tube sheet. And the lower feeder piping on the inlets and the outlets.

The material we would change them with are in the case of pressure tubes are the new current design that is going into CANDU reactors. This is a pressure tube design that's currently being installed in the Quinshan reactors in China. These will have a reduced inlet Hydrogen concentration. They will have a new rolled-joint design and will install the hard ends at the inlet. What this will do is give us more tolerance against diametric (inaudible) in future operations.

The end fitting design will be replaced -- will replace the welded joint. A welded joint versus a mechanical joint which we currently have in place. And we will put larger bearings to allow for more axial growth in the future.

In addition we will use a tight fit larger spring spacer with a small coil -- smaller coil diameter. The

current spacers we have are loose fit spacer and they are able to move in a reactor. We know from experience in using these tight fit spacers in other reactors that they stay in place and have less chance of moving.

We will also replace the calandria tube with a seamless calandria tube design. This feature in existing calandria tube there is a seam welded joint that runs down each tube. And we will remove that seem -- seem weld and replace it with a homogenous continuous extruded calandria tube which will give us the higher strength and better performance in service.

The new calandria tube will have a surface finish that improves heat transfer into the -- into the moderate. It will give us more tolerance against potential hot contact. And the feeders will be replaced with a corrosion resistant material.

I might point out that the existing -- we feel that the existing fuel channel designs are safe. There are over 12,000 of these fuel channels in existence in operation world wide in all CANDU reactors and of those we have only had three which have actually failed in service.

So that's what we are confident that we know and understand the pressure tube design. The new designs have been used in the Pickering reactors. There is over 18

full power years of operating service with the new design. And we have also had the new designs installed in Point Lepreau. One of them has been in service -- we have two channels with them in service. One of them have been in service since 1989.

Again so we know that these features do provide the expected improved performance that we are looking for on the long term.

Having once looked at the engine at Point Lepreau we decided that there is a knock in it and that we have a job to refurbish the engine, knowing what we have to do there. So we need to look at the balance of plant. And this is a part of the purpose of our condition assessment which we conducted in Phase I.

What are any of the other safety features? What are any of the other plant operating features that we need to look at? And are there any other equipment that need to be changed.

So when we looked at our scope, we choose to look right from the entry, the gate going into Point Lepreau to the outflow where the pipes go out into the seawater and looked at everything. And our mission was to ensure safe reliable operation until at least 2032.

We put together a joint assessment team made up from

people from AECL and from our own staff. AECL were augmented with contract support staff. We also put in place an independent committee of industry experts who brought experience from refurbishment in the United States, from Ontario, for Pickering, from some of the experiences at Bruce and used those to provide an oversight in terms of laying out the process and procedures we needed to put in place both to look at our safety issues, as well as our plant equipment issues.

In the conduct of that work we looked at over 60,000 items in detail. From those we generated 162 assessment reports. And there were some 1,700 recommendations, each and every one of which was dispositioned with a strategy for dealing with them.

Out of those 1,700 recommendations came the 27 specific in scope items which Mr. Eagles will talk about later in his presentation and to which Mr. Rod -- Rod White referred to earlier.

One of the exercises that came out of this was a message to us all that by and large the Point Lepreau equipment is running well. The balance of the plant was in good -- good condition. And these were some of the components which we looked at explicitly and which we are confident are working well.

Steam generators, a comprehensive review of the steam generators was conducted by the vendor, Babcox and Wilcox, with support from Siemens of Germany. We brought some European experience in and, as well, AECL. And this joint team concluded that if we continue to run the steam generators in the way we have that they should be good for another 25 years of service.

The turbines was looked at extensively and found to be in good condition. Most of the piping and vales, power distribution and electrical systems were looked at and found to be in good condition.

The reactor containment building and related similar structures were looked at in detail and found to be in good condition.

The plant information systems, one of the features about Point Lepreau is it has used computers as a fundamental part of control for all -- all of the key processes since 1982 when the plant started up. So we looked at those and as Rod mentioned earlier, Rod White mentioned earlier, we do have to change out some of the control computers in our -- in our safety system. That's part of the scope.

Our main digital control computers for reactor control we think are -- are fit for purpose until 2013. At which

time we would propose to change them out. And that's a part of our maintenance scope is to find in the business case to do that work at that time.

The Calandria and internals were found to be in good condition. Heat exchangers found to be in good condition. Major rotating equipment found to be in condition. The condensers found to be in good condition. Special safety systems of -- as a part of the ongoing program to do routine testing on them, we are confident that they are in good condition. Electrical cabling found to be in good condition.

And as Rod mentioned earlier, one of the key elements that we have done in addition to looking at the condition of the plant, was to look at the condition of our safety program. And our ongoing interaction with the -- with the nuclear regulator involves a program of comprehensive regulations and comprehensive involvement of the regulation, all parts of the function.

They were involved with the construction. They were -- have been involved with the commissioning and operation of the plant. And they will be involved right through until decommissioning.

So in Phase 1 we had comprehensive reviews with the regulator on our work and on our reviews of the -- of the

performance and safety systems. That involved detailed dialogue.

And as Rod mentioned, in our licencing framework document we addressed everything from the issues related to our approach on our environmental impact, to handling fuel, to handling heavy water, the safety performance of the safety systems and our strategies for -- for dispositioning those.

And the regulator Board staff responded with a comfort letter which identified that they felt that that program was comprehensive and addressed the majors issues. They saw no barrier for restart.

I think an important issue from all of this from our perspective too, is that during this period we do have -- we expect to continue to possess an operating licence for -- for the station. And during the period of the refurbishment, we consider it as a maintenance outage like most maintenance outages, except that this one will run longer than normally. But at the -- during the period and following the period we would continue to possess our operating licence as we go forward.

So in conclusion, we feel that the physical condition of the plant components is well understood. That the safety and licencing issues have been addressed and have

been thoroughly reviewed and have had our nuclear regulator's involvement.

We are confident the project scope will achieve the objectives of safe, reliable operation to at least 2032. And that all of the necessary CNSC approvals will be forthcoming.

That's the end of my presentation. I would like now to introduce Mr. Rod Eagles. Rod is the project director for refurbishment. He will be addressing the work at will be done in Phase 2 and Phase 3, and some of the costs related to this work.

MR. EAGLES: Can you folks hear me? Yes. Thanks, Stu. As mentioned I will cover the project scope, schedule, cost and execution plan for the project.

And in this slide we will review the project budget which was provided in the evidence. And the first item was the Phase 1 expended. And $40 million as was mentioned in Mr. White's testimony. And we have shown it here as $38 million of direct costs and $2 million of IDC which has been included here in this lower line interest during construction.

The retube contract which has been set with AECL for a firm price on the performance of the retubing work and that is $309 million. And that 309 million includes the

contracted price less the piece of retube work which was included in the Phase 1 project for about $7 million and escalation on the contracted amount which was in 1999 dollars to escalate up to 2001 dollars. An additional amount of $3 million was set there as well for the negotiation -- final negotiation of the seamless calandria tube design which would be firmed up next year following the completion of the qualification program on those tubes.

The refurbishment amount $141 million was completed in the negotiation of the refurbishment contract which was provided on Friday. And out of that $141 million there has been $1.4 million of that transferred to the retube contract under a change-order as it was more appropriately to be assigned there. Which is in part the qualification of the seamless calandria tube. And it was defined during Phase I so initially it was included as part of refurbishment work. We have removed it to retube.

Other scope of work for $39 million includes the rewind of the generator. And at this time we did not feel comfortable with the level of budgetary pricing estimates we were getting from suppliers. The substantial effort that goes into providing a quote of that magnitude and so we chose to include that as a provisional scope at which

time following approval of the project, we will ask the suppliers to provide a firmer estimate on that to AECL. We do have budgetary pricing at around $22 million for that piece of work.

Of the five items that I have mentioned to date, the first -- or, sorry, on the NB Power costs again $71 million about 50 percent of that cost is labour. It includes the project team and as well the labour which would be assigned from the station staff working directly on the project. Costs also include insurance during the course of the construction work and new fuel to replace that fuel which will be taken out during the refurbishment.

Of the five items that we have mentioned here the top three items which are direct and expended costs represent about 82 percent of the total direct cost before contingency.

The contingency amount that we have assigned at $35 million is a reflection of the significant amount of the project which we have under firm contract with AECL or expended at this time.

It also recognizes that within the -- within the firm prices that AECL has proposed to us that they have contingency that would reflect the risks that they had in

conducting that work under firm price basis. And so in essence the $35 million is contingency on the non-firm portion of the work.

Escalation and IDC, interest during construction, also applies to the contingency amount. So at the end of the project that amount would be about $44 million.

Escalation, interest during construction shown as the -- on the bottom of the slide, are estimated based on -- based on published indices and formulas that are built into the AECL contracts. And the interest during construction, based on the project schedule that we have built to date during the Phase I program as well as the -- as the milestone payment schedules which are included within the refurb and retube contracts, those -- those amounts for interest during construction have been calculated. And I will show a slide which depicts the cash flow for the project a little later. For total project cost of $845 million.

Just to review a few of the major project milestones. During the course of the Phase 1, we had identified that there are a number of activities that need to continue to progress as we go through this approval period in order to ensure that the project can meet the schedule for starting the outage in April of 2006. Our Board of Directors has

approved us to continue that work until such time as they make the formal approval of the project following the PUB recommendation.

And, as well, and I think it was mentioned earlier, the Phase 2 work commitment is really a milestone date which is 90 days of notification to AECL for the beginning of the contracts. And those contracts would formally begin Phase 2 work in February of 2003. That time line is defined by us needing to start -- us needing to start the outage in April of 2006, which we believe is prudent.

Provisional completion of the work in July of 2007 and project completion 18 months later in September of 2007.

This graphic was part of the evidence as well, and it shows the cash flow that we have defined based on the cash flow milestone payments that are in the retube contract and the schedule which was developed in Phase 1.

A number of the milestones are shown there on the -- on the cash flow chart. And one of the significant items is that at the beginning of the outage we have expended the amount of $578 million which gives a indication of the significance of the engineering and planning effort that's necessary to conduct this work in a timely fashion in the shortest amount of time possible during the actual outage in Phase 3. And that outage again is starting in April of

2006 to be completed in 18 months, 2007, September.

Reviewing the contract strategy and Rod White mentioned that as part of the risks mitigation process that NB Power has employed, will have a contract with AECL as the general contractor responsible for all aspects of the project, including the definition of the scope so that they were able to provide us with firm prices on the construction contracts, also the full engineering work procurement and the construction during the actual outage itself, to minimize any risk of delays in one aspect of the contract as a result of a conflict in scope between different contractors. And so we have consolidated that all with AECL, one contractor with the responsibility for conducting that work.

Having defined the -- the scope of the work, the firm price construction contracts have been negotiated and as I said earlier, 82 percent of the project scope is defined in those firm price contracts. And as part of ensuring that those contracts are completed on schedule, incentives and penalties in those contracts have been employed.

And on the long term the contract strategy that we have as AECL supporting the station through the CANDU owners -- or operation support services agreement and a performance risk sharing agreement which will provide

warranties of plant operation at 80 percent capacity factor or better.

Here we have the project organization chart. And AECL is the general contractor reporting to myself as the owner's representative and project director. And AECL in conducting the refurbishment work will carry out the role of general contractor. And underneath them they have a number of subcontractors who will be identified and brought on to -- to carry out the scope of refurbishment work as defined in the refurbishment contract. As well, they will coordinate the retube agreement which is the scope of work for the replacement of work for the fuel channels and do that work through AECL's retubing staff as well as seconded NB Power personnel and contractors and a number of subcontractors associated with that work. For instance, in the construction of radwaste facilities.

NB Power's project team would support the owner here in providing oversight to the AECL contracts. And, as well, will provide the interface to the station and support contracts that we will have at the station.

And in further definition of the scope of work that NB Power has, again Rod White had mentioned in his presentation the implementation of the labour stabilization agreement between the Construction Trades

Association and Contractors Associations which have been used successfully in NB Power at our projects at Millbank, Belledune and Dalhousie to provide us with labour -- labour stability during the course of this work. We have through a number of the discussions also described to date a good alignment with the -- with the regulator and the responsibility for regulatory approval lies with NB Power as the licence holder. AECL within their scope will be required to provide us with licenceable designs and certain support for discussions we have the regulator in the approval of those designs.

NB Power will be responsible for financing the project and maintaining the project office. The project office, as I mentioned, will be managing the AECL contracts, providing oversight to the -- to that work, controlling the scope of the project and managing the contingency dollars which might need to be allocated as -- as necessary through the course of the project work. In addition managing the interfaces with the plant and how the station will execute their own scope of work which will be conducted as part of an ongoing outage we will say to conduct normal predictive and preventative maintenance work that -- that they have within their own scope.

Additional we will second staff to AECL and in

particular in the retube agreement to support the AECL work, activities such as radiation protection. And at the end we will execute the commissioning process with the use of our operations, maintenance and technical personnel under direction of the project office, as well as technical support from AECL in the conduct of that work.

I have included in the presentation three slides which depict some of the work that has gone on to date in the modelling of the retubing process. And it gives a sense of the detailed engineering work that has been conducted to -- to identify, I guess, the tooling required and the processes that will be conducted. The time motion studies that -- that are necessary to be conducted in order to understand fully the schedule of work, the access and the constraints on equipment.

Showing the reactor face and the fuel channel infittings with the feeders and the fuel channel assembly. This short video clip will last about one minute.

Video Clip: Position below the processing unit during the operation. The control panels, not shown here, are located in the shielded enclosures at the back of the work platform. The processing unit is manually aligned with the channel. The retrieval head latches onto the

irradiated pressure tube and pulls it into the feed unit. The feed unit pulls the pressure tube into the processing system in 350 millimetre increments. This system, a checker-board shear press, compacts the pressure tube segment flat, then shears it into 50 millimetre squares. The squares are ejected from the press during retraction and fall into the flask located below. The following demonstrates the insert removal process on a single channel. Only one insert can be removed at a time since the Calandria tube must be secured at all times during the process. The insert must first be released before it can be pulled out by rapidly heating it using an induction coil. The insert is pulled out into the flask where it is deposited onto a sleeve. The Calandria tube is anchored with a locking tool after the first insert is removed. The anchor secures the Calandria tube to prevent it from falling into the Calandria vessel. After the Calandria tube is locked, the second insert is removed using an identical process. The temporary shield plug is removed and the guide tool is engaged with the Calandria tube.

We will switch back to the slide presentation now. This was just a short depiction of the level of detail of engineering work that has been done in a 3-D computer simulation. This was just a short excerpt of the work

that has been done in the 3-D computer modelling that has taken place to date and continues to take place to define additional improvements in work processes and improvements in the tooling design in order to conduct that work.

As part of this re-tubing work we have defined that the re-tubing itself is the single largest job to be conducted during the refurbishment work and the schedule is laid out here. The de-fuelling to take place over -- and preparation for re-tubing to take place in the period of about two-and-one-half months from the first of April 2006, so about mid June. The re-tubing itself, the critical path, about 12-and-one-half months, take us to July of 2007. And to commission the plant about two months. And this period totals about 17 months of the total 18 month project schedule.

So within the project schedule today we have about one month of float where we would expect the plant to be operating at full load.

In addition there are additional initiatives within the re-tubing work going on today to shorten the time frame to conduct that work and under change order number 1 AECL has already committed to a one month shorter schedule. And additionally within the de-fuelling area NB Power is working with AECL to define improved processes

for removing fuel from the reactor and with potential to shorten the de-fuelling portion of the schedule potentially up to about three weeks.

All of that really adds additional conservatism into the schedule and therefore we believe that the schedule is certainly -- certainly capable of being completed within the 18 months for certain.

In conclusion, we believe that the scope has been well defined. We believe that through the discussions we have had with the nuclear regulator that we have good alignment between the regulator and ourselves, that 82 percent of the cost is defined as firm price, that AECL as the general contractor shares in the performance of its work risks during and after the refurbishment program on the longer term and with the negotiation of the labour stabilization agreement we will have labour stability through the construction period, and the project can be and will be completed on time and within the budget.

I will turn it over to Mr. Bill Pilkington to describe the operation of the station.

MR. PILKINGTON: My name is Bill Pilkington and I have been with NB Power at the Point Lepreau station for 22 years, and for the past seven years I have been the station manager, that's the senior position at the station,

reporting to the vice-president nuclear, Rod White.

This afternoon I'm going to talk about performance improvement initiatives at the Point Lepreau station and about our long-term projections for expected expenditures and for capacity factors of the station.

There has been a lot of effort in the US over the years to improve nuclear plant performance and Rod White presented a slide that indicated that in 1980 the median plant in the US was at about 63 percent capacity factor, and that by 2001 the median plant was above 90 percent.

We will be using the same types of methods that have been used in the States to improve the performance of Point Lepreau.

And these improvements really fall into three areas. The first being human performance, having the right number of people with the right skills and training, giving them clear standards, good procedures and policies, so that in fact they can complete work efficiently and without error.

Improving equipment performance, identifying equipment that is chronically causing unreliability and replacing that equipment using design changes.

Expanding inspection programs and maintenance programs to cover all important systems and components. In that way we increase the reliability of the operation of the

station and we avoid unexpected degradation or equipment failures.

And finally improving work processes, building quality into the way that our processes work, using information technology, and streamlining those processes so that people can work effectively and get the business results that we need to be competitive into the future.

I would like to speak to some of the specific improvements that are underway at Point Lepreau.

Since 1997 we have been increasing our staffing levels. That's so that we can address aging issues, implement improvement programs, and these people will also offset attrition due to retirements in the future.

We have and continue to expand our inspection programs and our maintenance programs. We have applied additional resources to reducing backlogs, first in maintenance and then in other areas including design engineering and training.

We are making improvements to our work processes. We are currently documenting the current state of work processes and we are making improvements to some on an incremental basis and others through complete re-engineering.

We are transforming the station culture to a learning

organization so that we can move to an environment with continuous improvement, so that we can operate effectively over the long term without going through a cycle of declining performance which then requires a focused improvement program.

I would like to talk a little bit about the relative incremental costs of these improvement efforts and then about our longer term operating and maintenance budgets.

I will speak first to the expanded insert. And this shows our basic expenditures and support services which is the ongoing cost of operating and maintaining the station. And the main factor that affects those costs is our annual planned maintenance outages. And so you can see in the fiscal year 2004/2005 when we don't have a planned maintenance outage scheduled, the cost is significantly reduced.

Everything above these costs, these base costs of operating and maintaining the plant, is in fact our investment in improvements. And I have shown it here in two categories. The first in the magenta is the improvement initiatives aimed at equipment performance and that being mainly in maintenance programs and inspection programs, and these are already well underway and the bulk of this work being done in this fiscal year and in 2003/

2004.

The program in maintenance will then be reduced and will reach completion by the start of the refurbishment outage.

And finally on top of that I have grouped the improvement initiatives which cover organizational and human performance initiatives and process improvements.

In the area of process improvements these will be accelerated as we move towards refurbishment and again will be complete by that time.

Looking past the short-term increased costs for improvement, our operating and maintenance costs will be reduced during the refurbishment outage when much of the staff will be transferred to the capital project. There will, however, still be an operating and maintenance budget in order to maintain laid-up equipment in the proper state, to operate those services that are required for refurbishment and to carry on the normal shut-down maintenance in the parts of the plant that are not being refurbished.

Post refurbishment we will have a stable operating budget over a long period of time and the ups and downs in that are as a result of having maintenance outages on a 24 month cycle, so that it needs each year or each second

year there will be a maintenance outage. And the budgets will be approximately a hundred million dollars over that period of time. After about 13 years of operation post refurbishment we will see an increase in the cost of maintenance outages to deal with plant aging. And then over the last five years we will see a greater increase in the operating budgets. This is due mainly to the costs for staff retention towards the end of plant life and also in part in the last three years of operation we will not have a capital budget. So any improvement cost that we incur will go directly into O and M.

Looking at our projections for ongoing capital spending, we are currently nearing the end of a capital improvement phase and of course the refurbishment project itself isn't shown, so what you see is a reduction in the remainder of plant capital spending through refurbishment.

And then post refurbishment we will have a relatively stable capital budget of about $10 million a year as a base budget. And that number is consistent with Lepreau history over the long term and with the ongoing capital costs of other nuclear plants in the States.

That capital program covers such things as cost effective improvement to design and also the ongoing replacement of obsolete components with new designs.

Superimposed on that we do have some increased expenditures in some years. The obvious one here is in 2013 and that's an additional $30 million to replace the station digital control computers. They will have reached the end of their reliable life by that time.

As well in approximately every four years we will have increased expenditure to construct additional dry fuel canister storage.

And then in the year 2020 there will be a capital expenditure to implement Canflex fuel. That will be a change to the fuel design which will be required later in life.

And as mentioned in the O and M slide in the last three years of life we will not have a capital program.

Now post refurbishment capacity factor, we have estimated at 89 percent and when you look at the median plant in the US operating above 90 percent, we don't believe that is too aggressive a target. In fact if you look at Lepreau's performance and remove the loss of capacity as a result of fuel channel and feeder problems, the capacity factor to date would be 88.1 percent.

So post refurbishment we would be moving to a 24-month outage cycle. And that in fact would increase capacity factor by about 1 percent. For the first 13 years of

operation we will have outages at 30 days every two years. And then after 13 years, to account for plant aging, we are increasing the outage duration to 50 days.

In order to be conservative in the business case for refurbishment we have added an additional 50 percent contingency time to the 30-day outage period and the 50-day outage period.

In addition we have added in 3.5 days per year in each year to allow for a forced outage. And in those years when we don't have a scheduled maintenance outage we have allowed 10 days for forced outages or equivalent production loss as a result of deratings.

We have also assumed that we will switch to Canflex fuel in the year 2020 and by doing that will be able to operate the plant at full power to end of life. Currently because of plant aging Lepreau is operating slightly below 95 percent. And that degradation output will be corrected by using Canflex fuel.

So a plant operator's perspective on the benefits of refurbishment, we will eliminate the technical and financial problems that are attributed to fuel channels and feeder tubes. It provides the driving force and the time frame to complete the improvement initiatives. And by refurbishing the plant and refurbishing the

organization we will be able to return Point Lepreau to world class performance.

So my conclusions as Lepreau station manager is that our capital and O & M spending targets are appropriate, that the necessary improvement initiatives are under way at the station and that high capacity operation over the long term is achievable.

Thank you. I will now turn over to Stu Groom.

MR. GROOM: Thank you, Bill (Mr. Pilkington). One of the advantages I have as being a speaker again with you is that I can pick up, having not properly introduced myself the last time I spoke.

I'm Stuart Groom. And I'm the Chief Nuclear Engineer. I have worked with NB Power for 27 years on this project. What I want to talk to you about is our decommissioning. The decommissioning and used fuel management program is a program that we have had in place since we first started Point Lepreau. The nuclear regulator regulates the requirement for decommissioning activities on the plants.

We have had a plan that they have required us to have in place since startup. This plan is periodically reviewed usually on about a three-year cycle. It includes the strategy for used fuel management. And the requirements have most recently been submitted to the

regulator for review in 2001, for which we have got their acceptance of the plan.

The new requirement in 2001 fell out from the restructuring of the regulator, the new Act in 2000 which also included a requirement to include a cost plan. So our current plan involves both a strategy for the conduct of the decommissioning and used fuel management and for the costs thereof.

The basic assumption of the decommissioning plant is that it would return the site to a safe state for unrestricted use, which would include removal of the reactor and all the components as well as the used fuel management and waste facilities.

The elements of the plan are that it involves an initial inaugural period lasting about a year to take away all of the nonradioactive components that are not necessary to continue with the facility.

And that would involve removing all of the fuel from the reactor, taking all the heavy water out of the reactor systems, putting that fuel into the spent fuel bay and removing the turbine generator and other such ancillaries.

The plan then allows for a safe storage period lasting about 32 years. And the mission here is that the radioactive components that would remain in the reactor

structures could be allowed to decay with the passage of time which then lowers the radiation fields. This reduces the dose to the workers who would come and do the final decommissioning of the reactor structure as well as reduce the costs. So that is included in the plan.

The plans are built on a structure that are standard for the nuclear industry in Canada. And they are really based on a program that was developed through the United States for decommissioning and as a part of a structure of the US NRC strategy. So it is aligned with that.

Thereafter at the end of the 32-year period there is about a 10-year period where we do the final decommissioning and removal of facilities. And thereafter the nuclear materials are assumed to be transported to a central Canadian repository within 2,500 kilometers of Point Lepreau for a site for permanent burial.

In terms of removing the fuel from the reactor, the strategy for fuel movement comes -- the fuel moves from the reactor for underwater storage and then moves from underwater storage to above-ground dry storage.

What we are looking at here is a photograph of the spent fuel bay, the underwater storage facility that is at Point Lepreau. This for all intents and purposes looks like an Olympic size swimming pool.

So what you are looking at here is a swimming pool. It is a little deeper than a normal swimming pool insofar that it is about 10 meters deep, about 30 feet deep. And the lower 20 feet is used for the storage of the fuel. And the upper portion provides a column of fuelling water.

The fuel stays in this bay for a period of about seven to seven and a half years. This is to allow the fuel to decay and to cool. So by the time a fuel bundle is ready to be removed from the bay it contains -- well, it gives off about 200 watts of power, about the same as an incandescent lightbulb. So that is the amount of heat that we have to deal with.

We move currently when we are operating about 5,000 bundles a year through this spent fuel bay. And they are moved from their storage facility in this way into cans where the bundles are stored vertically. We store in each can about 60 bundles. And the cans then are stacked about nine high. So we have about 540 bundles in a storage device.

This photograph shows the on-site storage facility. In the lower left-hand portion you see the canisters. Each one of these canisters, as I mentioned earlier, holds about 540 bundles.

The array that you see here is about 10 years worth of

storage. The facility can handle about 30 years of storage. At the end of 30 years then we would build a duplicate array for storage if it is decided and recommended that we go forward with refurbishment. Otherwise this will accommodate the needs for the current operation.

In addition we have a storage facility here for the reactor wastes. Now this represents the storage requirements from about 20 years of operation. Again if we extend the life of Point Lepreau, we will build a second array of reactor waste storage facilities.

And also we would put a similar array that looks very much like -- well, they are very much like these canisters would be put in this area here for handling the reactor components from retube refurbishment.

And the issue on the EIA submission is to construct in this area the canisters for the reactor wastes from retube plus accommodate the extended waste construction. There will be similar devices in the area here. This entire area had been originally licenced to accommodate that expansion. It was built for two units, so the facilities can accommodate those -- that extra construction.

The used fuel canisters have a design life for 50 years. The canisters can be replaced to achieve longer

term on-site storage of fuel or other nuclear products from decommissioning activities if required at a lower cost.

The point being that if it should transpire that the decision on the part of the federal government for an ultimate repository takes longer than we projected in our models, the capacity for longer term storage on site is still available.

The cost estimates that we have put together include the following for decommissioning. All the elements of the plan that I have talked about in 2001 dollars are accommodated with a cost of 554 million.

This estimate has been given an independent review by an outside consultant to confirm that the numbers that we have put together are appropriate. These numbers are not a lot different from what was submitted to this panel in the submission in 2000 -- or sorry, in 1992. The model, the plan and the costs are similar.

The other element of this plan is for the used fuel management portion. And if we operate the plant to a 2006 life then the costs for radiated fuel management are assumed to be conservatively at 389 million.

If we continue to run the plant for another 25 years at 2032, those costs go up on a pro rata basis in

proportion to the amount of fuel. And they are projected to be at $803 million in 2006 dollars -- 2000', excuse me, '1 dollars.

So conclusions, we think the plans and cost estimates meet industry standards for decommissioning plans and for radiated fuel management plans. The CNSC has completed their review and find the decommissioning plans and used fuel management plans to be acceptable.

And that is my concluding remark. I would like now to turn the floor back over to Mr. Rod White, our Vice-President, Nuclear who will provide our concluding remarks.

MR. WHITE: In concluding our presentations today we have seen from Panel B's evidence that the capacity and energy that is supplied by Lepreau is required to meet the load forecasts. We have also seen that refurbishment of Lepreau is the least cost option considering the gas and the Orimulsion as the nearer term ones. Panel B has also demonstrated that from an environmental point of view to meet the carbon issues of the future that Lepreau is environmentally the preferred choice as well. And Sharon MacFarlane demonstrated that the net income and cash flow and other financial issues demonstrate a financially sound approach in the refurbishment of Lepreau.

From looking at the work that needs to be done and the Phase 1 work that has been done to date we can see that the project scope has already been well defined, and it has been defined well enough so that we have been able to provide and negotiate with AECL firm price contracts for 82 percent of the direct costs of the refurbishment work.

The mechanism through our Industrial Relations Act and the Labour Stabilization Agreement allows us to predict that labour stability should be an expected component of this job.

We have also recognized that the costs and schedules that have been built have conservatisms built into them and that the schedule for 2006 is an important time in terms of ensuring that we have reliability of power supply and not exposed to unexpected shut-downs. An unexpected shut-down in Lepreau due to failure of a pressure tube could easily put the unit out of service for in excess of a year, and a years outage in Lepreau would carry the price tag in excess of $200 million in replacement energy cost.

We think it is prudent to plan for this and to do otherwise would be imprudent.

We believe that refurbishing Lepreau among all the choices that we have is the right one to do for New

Brunswick and the right one to supply the necessary power supply for reliability of service in the future for New Brunswickers.

Thank you very much.

CHAIRMAN: Mr. Coon.

MR. COON: Mr. Chairman, I wonder before we shut down and while it is still early if we could see the video one more time -- (inaudible)

CHAIRMAN: I am having trouble hearing the last part of your comments, Mr. Coon.

MR. COON: -- and if we could let the video run out to the end so we can see how the Calandria tube is handled. It was cut off before that part of it came up.

CHAIRMAN: All right. But I think we will take a break before we go back and watch the video.

MR. COON: The other point on that, Mr. Chairman, was whether or not, if this is evidence, whether copies will be provided to intervenors of the video.

CHAIRMAN: Do you want it frame by frame? No, I'm not being supercilious.

MR. COON: I mean on CD, Mr. Chairman.

CHAIRMAN: We will talk about that during the break. We will take a 15 minute recess.

(Recess)

CHAIRMAN: Mr. Hashey, can you provide Mr. Coon with a copy of the video that was run in here during the display?

MR. HASHEY: The answer is yes, we don't have one right now that can be supplied but apparently it could be done on video, not on disk.

CHAIRMAN: All right. Would you make arrangements then to get a copy to Mr. Coon and, Mr. Coon, will you review it and after you have reviewed it would you indicate to the Board why you think it should be in evidence?

MR. COON: Yes. Thank you. As long as the end part dealing with the Calandria tube removal is part of the video just -- that was shut down early, so it's the next piece that should be part of whatever is going to be provided.

CHAIRMAN: Well unless it goes into a tour of something or other we have no interest in. Anyway, let's see what is there, okay. All right. Anything else, Mr. Hashey?

MR. HASHEY: I believe it's about a six minute video. There is nothing to hide. We will make it.

CHAIRMAN: No, I don't want to see it now. We will look at it if after Mr. Coon has seen it he believes we should. Sorry to make light. All right. Then this panel is open for cross-examination. And I had an opportunity on the way out to at the last break to speak to Mr. Miller, and I understand that AECL does not wish to put any questions to

the panel, is that correct, Mr. Miller?

MR. MILLER: That's correct, Mr. Chairman.

CHAIRMAN: Thank you. So the first in line to cross-examine would be Canadian Unitarians for Social Justice and Saint John Citizens Coalition for Clean Air, and if Mr. Dalzell and Ms. Flatt would like to come up to mike number 10. Ms. Flatt, are you going first?

MS. FLATT: Mr. Chair, we thought we would do a tag team.

CHAIRMAN: All right. Just in line with some of the interrogatories that you posed to NB Power, remember we are the economic regulator.

MS. FLATT: We have been trying to remember that in preparing our questions.

CHAIRMAN: All right. Go ahead then, Ms. Flatt.

CROSS-EXAMINATION BY MS. FLATT and MR. DALZELL:

MS. FLATT: Thank you. For the first question I would like to reference A-16, the slide show that we all enjoyed. I noticed slide 47 in regards to the contract with AECL an 80 percent capacity factor was noted, the 80 percent capacity factor basis. I sort of -- I went through A-17, the actual agreement, and I was trying to figure out if 80 percent was the cut-off between who pays who, if -- am I correct -- and then NB Power goes over the 80 percent they pay, if they go under they get paid?

MR. WHITE: That is correct. 80 percent was the point that we chose for the first 15 years of operation and that if capacity exceeds 80 percent then AECL will be paid a bonus. If capacity is less than that then NB Power will receive liquidated damages.

MS. FLATT: Okay. May I refer to slide 83, please, in A-16. Proposed refurbishment capacity factor 89 percent. So there is a nine percent difference here. I guess my question is obvious. Between 80 and 89 percent, would it not be to the benefit of NB Power to have an 89 percent capacity factor?

MR. WHITE: The answer is yes, but going back to the original design of the unit, it's essentially designed for an 80 percent capacity factor over a 30 year time frame, and so that's the base at which we created the bonus and the liquidated damages.

MS. FLATT: So on slide 83 this 89 percent is not really accurate. It actually should be 80 that you are hoping for?

MR. WHITE: No. The project is designed based on 89 percent capacity factor. It recognizes that what we run to date is 83-and-a-half if you take out the difficulties that we have had with fuel channels and feeders, which this refurbishment is intended to address, that will bring us

up to 88, and if you add an additional one percent for going to a 24 month cycle, that's how we got the 29 -- or the 89 percent. So we believe that that is an appropriate target.

MS. FLATT: Okay. So have you factored in what it's going to cost NB Power to run at 89 percent capacity factor under the agreement with AECL?

MR. WHITE: Yes, those costs are included in the economic comparisons.

MS. FLATT: Okay. Thank you. I just would like to look quickly at A-5, and I will be using this book, this A-5 evidence for the rest of my questions. NBPCUSJ-1 -- actually it's NBPCUSJ-2 -- A-5, NBPCUSJ-2, page 2. With the 89 percent capacity factor plans I'm wondering where this -- what is so extraordinary about NB Power that it will reach 89 percent when we are looking at the average capacity factor for all CANDU plants in Canada and none of them have reached 89 percent.

MR. PILKINGTON: Yes. The reasons for choosing 89 percent have to do with the Point Lepreau's history, operating history, if we remove the production loss as a result of fuel channels and feeders, and based on experience in the US industry with improvement programs similar to what we will achieve when we take refurbishment and the

improvement initiatives that are ongoing at the plant.

MS. FLATT: Though the US does not have any CANDU plants.

MR. PILKINGTON: No, they don't. However the CANDU design, the CANDU 6 at Point Lepreau, has proven the capability if it's in good operating condition of exceeding those capacity factors, and the types of non-plant related improvements to make organizations more effective and work processes more effective are independent of design.

MS. FLATT: Okay. Thank you. This next question is referencing NBPCUSJ-3, next page. It's indicated in the response that a significantly higher cost would ensue to avoid similar amounts of emissions. Is that still the case in light of the most recent federal incentives for wind generation?

MR. WHITE: I think the details of that are a Panel B answer, but -- I think we shouldn't lead into Panel B evidence I suppose at this time, Mr. Chairman. Those details are included there.

CHAIRMAN: It is certainly your choice. If you don't want to get caught into a situation where you have to give further testimony concerning it, you probably should --

MR. WHITE: I think we would reference that to Panel B because that's really where the answers are.

CHAIRMAN: My fellow Commissioner has pointed out to me of

course it was your direct evidence that said that.

MR. WHITE: Yes, I said that and it's based on the details of the evidence that are in Panel B. So if we want to go to those details I think that was a Panel B question.

MS. FLATT: Am I to understand that there will be another whole chance to question another panel another day?

CHAIRMAN: Yes. Those folks who were on first today and then stepped down, the panel of two.

MS. FLATT: Okay. I apologize for directing this question to the wrong panel.

CHAIRMAN: I don't blame you a bit. Mr. White had it in his testimony, therefore I would have questioned him as well.

MS. FLATT: Okay. I will have to remember to keep that question on the tip of my tongue.

MR. DALZELL: I will make reference to some of the slides that were presented. I would just like to ask the first question in respect to the A-17, the Plant Performance Agreement between New Brunswick Power and the Atomic Energy of Canada that was passed out this morning, A-17. And one question in respect to that.

Okay. And it is in respect to Article 4.3, page 10. And, of course, it's self explanatory, but in the event that NB Power, for example, is privatized, or sold or if there is some kind of a change, how does that article,

which states that NB Power shall be the sole operator and has the right to make and all final decisions, et cetera, which is in there -- how will a new owner or a new financial arrangement in a private entity -- how will this agreement be affected? Will this agreement be transferred to a private company or private corporation, let's say, British Energy, for example, if that was ever to happen?

CHAIRMAN: Mr. Dalzell, I'm going to stop you there. And only -- if in fact what Mr. Coon has an inside track on and an announcement in fact is made on Wednesday and something the likes of which you are speculating on occurs, then I don't think Mr. Hashey would have any difficulty in allowing you to pose questions like that after the panels have been given an opportunity to study what in fact it has been -- the government has decided to do. But otherwise we could be speculating with questions till the cows come home. Okay?

MR. DALZELL: Yes. In respect to the slide then we will -- for example, slide number 33, if we could just ask for clarification. It was stated that -- and it's stated the are zero emissions of greenhouse gases CO2 and NOX, but could the witness explain will there be any other emissions that could still be defined as a contaminant under the Clean Air Act even though those are noted in

slide 10 to be zero emissions. But looking at radionuclides, Tritium, other substances that could be declared a contaminant under the Clean Air Act. I wonder if you could clarify that and if they were what provision will be made to mediate them?

MR. WHITE: Let me give a shot at this one. Being a nuclear station, of course, we do have some radionuclide emissions, you know, and some Tritium. If you look under the operating life of the station I think our exposures under those are about -- if I remember correctly -- in the order of 21 micro sieverts in the 18 years of operation of the station. And the normal background is between 2,500 and 5,000 micro sieverts. And the legal limit is 1,000 per year. So yes, we have some, but they are exceedingly small.

MR. DALZELL: If I could ask a supplementary to that. The federal government are looking at declaring the radionuclides toxic under the Canadian Environmental Protection Act. It's an ongoing regulatory change that could be coming.

If that is the case will your present standards, your present emissions as you mentioned, will they be satisfactory to meet these new federal regulatory requirements as "toxic" under CEPA?

MR. WHITE: I don't think I know the answer to that. But we meet all regulatory requirements under the CNSC. And we will continue to do so.

MR. DALZELL: Yes. I'm just wondering if though you are planning, in the eventuality that these materials could be declared toxic, and if they are there has to be a different type of handling and management of them?

I'm wondering if you planned for that in your cost analysis of this proposal?

MR. WHITE: We planned for the things that are defined within the regulatory environment and under our licence. And we will meet -- we do meet those requirements. And we will continue to meet those requirements.

MR. DALZELL: Thank you. Under slide 41 it mentions the Canadian Nuclear Safety Commission, the scope, definition there, and slide 42.

In the event that the regulator could recommend a full environmental impact assessment or a panel review or a comprehensive study, what provisions have you made in your proposal to deal with that possibility? Because there could be recommendations that could come from that that could be very expensive.

I'm wondering if you have taken into consideration in your proposal that eventuality that the regulator could

ask for a full environmental impact assessment, a panel review, et cetera?

MR. WHITE: My assessment is that that is probably not going to happen. There are very specific triggers under CEPA. The only trigger is the waste site licence in this case.

And Lepreau has already gone through two full environmental assessments in the past. So the station has been fully addressed from that point of view both in unit 1 and unit 2.

MR. DALZELL: Yes.

MR. WHITE: And it meets all licencing requirements. The operating licence isn't changing in this case. The environmental assessment scope that has been defined reaches into the station far enough to get at the retube wastes here. And it also addresses any incremental effects of ongoing operations.

So we believe it adequately covers those requirements and that the scope that has been defined will be found by the CNSE to be the appropriate scope.

MR. DALZELL: Yes. Thank you.

MS. FLATT: Yes. Back to A-5 please in reference to NBPCUSJ-17. In the response to a question, you noted that the plant is of robust design and that Phase 2 was not expected to identify changes that would significantly

reduce public risk.

Now in the past few weeks several local people have told me what might be considered urban myths about various tomfoolery that went on during the initial construction of Lepreau. These included disgruntled workers who put various items from bottles to their uniforms into the concrete at the end of the day.

Now if any of this was true would NB Power be able to detect such items? Or have they? Have you been able to put any cost considerations for such work into your charts? Would this in any way compromise the robustness of the plant?

MR. PILKINGTON: I think you are talking about the condition of the containment structure?

MS. FLATT: Yes. The actual concrete when the concrete was poured.

MR. PILKINGTON: Right. And there has been extensive testing done on the concrete containment structure. And there is an operational test that we do on a three-year interval, which is to actually pressurize the entire containment structure up to its designed pressure and confirm that there is no excessive leakage from the building and in fact to prove the structural integrity.

So if there were any large inclusions that would

affect the structure, it has now been going through this cycle every three years for its life. So those would have been evident by now.

MS. FLATT: Great. In reference to NB Power, CUSJ-18, page 18, you noted that seismic monitoring systems have been in operation since the mid 1990s.

Why did you install these seismic monitoring systems in the first place?

MR. GROOM: They were installed as part of the regulatory requirements for the capacity to detect the consequence of potential seismic events.

MS. FLATT: What would the scope of a potential seismic event have to be to be a serious occurrence?

MR. GROOM: It varies from station to station. And there is a design basis seismic event that has been defined for Point Lepreau, which identifies the levels of response the building and structures are designed to.

MS. FLATT: Yes. So in regards to an occurrence that perhaps exceeded safe limits, how long would it take to secure the plant if there was such an occurrence?

MR. GROOM: The procedures involve responding to shut the plant down, put the plant in a safe state while we go through an evaluation following the confirmation that there has been a seismic event which exceeds or may

challenge the design limits of the plant.

And the criteria and thresholds for shutdown are identified in procedures.

MS. FLATT: Okay. So are there any times during normal operations when the plant would be particularly vulnerable to seismic, or dare I say a number of other untoward events?

MR. GROOM: No. We don't think so.

MS. FLATT: No. Great. Thank you.

MR. DALZELL: Okay. In the binder in A-6 about five blue folders down, count five in approximately, you come to the Board meeting. The Board meeting which is dated November 18th 1999. In that particular Board meeting reference about five pages in from the fifth blue mark-off.

CHAIRMAN: Is that in front or behind 19? What about 102, where is that in relation to this blue page?

MR. DALZELL: Okay. It's the fifth -- if you go to A-6 and you count in approximately five -- five or six.

MS. FLATT: One, two, three, four -- oh no, no, no. It's not five.

CHAIRMAN: Okay. A-6 has tabs --

MR. DALZELL: Yes.

CHAIRMAN: -- which are CCNB 6 (b).

MR. DALZELL: Yes. There are no tabs in this particular

binder. It's about the eight blue mark --

CHAIRMAN: Well then you haven't got A-6.

MS. FLATT: Oh okay.

CHAIRMAN: Or I shouldn't say that so definitively.

MS. FLATT: It's 2 of 7.

MR. DALZELL: It's 2 of 7, the response interrogatories 1.

CHAIRMAN: Volume 2 of number 7?

MR. DALZELL: Yes. I thought that was A-6. I might have been incorrect.

CHAIRMAN: Ms. Tracy is leaving the room because obviously there was one that went out that didn't have tabs in it. I'm sorry. Anybody found what he is talking about that can relate us? Mr. Goss what?

MR. GOSS: 102.

MS. FLATT: 102?

MR. DALZELL: November 18th Board meeting. 1999, October 18th 1999.

MS. FLATT: There is tabs. It is.

CHAIRMAN: It's November, I think he said. I can't hear you, Mr. MacNutt.

MR. MACNUTT: Well if they would warm up the generator back there we might get this operating. It's about three-fifths of the way through, Mr. Chairman.

CHAIRMAN: We have got it because it's right after -- what

is it, 120? Yes, it's right after 120. Okay, Mr. Dalzell, go ahead.

MR. DALZELL: Number 6, Point Lepreau a special case. It's on page --

MS. FLATT: After page 8.

MR. DALZELL: After page 8. It's not marked, but it's after page 8 of that Board meeting. It has the pros and cons listed. Okay. The question is, it is listed there the pros and cons of refurbishment and decommissioning. In respect to the refurbishment it talks about some of the cons, high investment costs, unpredictability of the project. Lack of management bench strength. And public scrutiny and publicity.

I'm wondering in terms of the management bench strength if you could elaborate and advise what impact that will have, or could have, and have you planned for that in your proposal? And what are the implications from a cost perspective for that particular comment, lack of management bench strength?

MR. WHITE: We were recognizing that in 1999 when this Board document was discussed, that many things can change and will change in the seven years leading up to Lepreau refurbishment, being the 2006 date.

That in fact, our commission will probably change,

which it has. Our chairman will probably change, which it has. Our president will probably change, which it has. Okay. That before we get there we have many people that have -- are senior in terms of their service with the corporation, and attrition will take place in Lepreau. And that developing leadership is important. And so bringing in and attaching people to both the station in a succession planning process and leadership in general in the Corporation is an important issue that needs to be addressed by the Board and make sure that we pay due diligence to that issue.

MR. MACNUTT: Mr. Chairman, I wonder if Mr. Dalzell has any similar further references. And if so, perhaps he could identify the document in appendix -- in exhibit A-6 that he is referring to or in any other exhibit which is a series of unnumbered pages. If he could identify them and over a break we could then have NB Power find them and make copies and that would simplify and speed the process.

CHAIRMAN: Mr. MacNutt, thank you for the suggestion. But I'm going to let Mr. Dalzell go ahead now. And if when he comes to examine panel -- I guess it's A, isn't it, yes. A, why maybe you could do that, Mr. Dalzell.

MR. DALZELL: Yes.

CHAIRMAN: But carry on with your examination now.

MR. DALZELL: Okay. We will continue with the slide references which we are all familiar with from the presentation.

CHAIRMAN: Well you can -- you can make a search, that's all right.

MR. DALZELL: Okay. In -- oh yes. In respect to Mr. Pilkington's comments in the slide presentation of 77, approximately 77, 78 in that period up to 81, the comment was made that "Work will be going on".

And the question is during this refurbishment when they are doing some of the work, what work will continue to be going on? And if there is this work going on at the same time that there is this construction and this work going on, will it have any destabilizing impact or upset the equilibrium of the operation as "The work goes on at the same time of the construction activity"?

I wonder if you could elaborate on what work will continue to go on and what impact that will have, please?

MR. PILKINGTON: You are referring to the comments I made on the O & M budgets?

MR. DALZELL: Yes, on slide 81, I think. We made a note "Work ongoing", I think, "Work ongoing". Excuse me, was made.

MR. PILKINGTON: Right. And that work will be integrated in

the project plan. There will be portions of the plant that will be turned over for retube. There will be specific refurbishment jobs that will be done. And then in parallel with that, there will be normal shutdown maintenance that will be done on the plant. And there will also be the need to operate those portions of the plant that will provide the services to the plant in support of all of the activities going on.

And that through planning for the project and for the shutdown will integrate those activities. And in fact, rather than perhaps cause conflict, certainly some of those activities are necessary to be integrated for all of the activities to go on.

MR. DALZELL: Supplementary, if I might, do you believe that while this work is going on and the various aspects there won't be any compromising of -- of safety? And will there be any hidden cost from unexpected circumstances during this process?

MR. PILKINGTON: The simple answer would be no. In terms of compromising safety, the plant will be in essentially a safe state with the fuel removed from the core for retube. So it will be in an inherently safe state. And I'm sorry, the second part of the question?

MR. DALZELL: In terms of the cost, had you planned in your

cost analysis for any unexpected events during this process when systems obviously are going to be impacted. There is going to be multiple activities going on, had you planned for the cost related to any unexpected events in respect to these ongoing activities?

MR. PILKINGTON: Okay. Well, we go through maintenance shutdowns now every 18 months. And the process is similar in that we have to create appropriate plant states, and then we slot work into those states that's appropriate. I don't see this as being significantly different in terms of the management of work. And we have done the plant condition assessments in order to identify that work which will need to be done within refurbishment.

MR. DALZELL: Mmmm.

MR. PILKINGTON: The work outside of that, being normal plant maintenance, is the type of work that we would do in any shutdown. Because as well as a refurbishment shutdown, this will also be a regular plant shutdown to do periodic maintenance.

MR. DALZELL: Thank you.

MS. FLATT: This next question references NBPCUSJ-30 and A-5, A-5.

In particular I'm interested in the answers to the last two questions that I posed. It was noted that you

have not obtained community or societal approval to dispose of waste in the manner proposed. The Seaborn Commission also noted this and it is stated in THE executive summary, page 3 of 20 of Point Lepreau Generating Station information report that radiated fuel management cost estimate in the 2001 update reference to the Seaborn.

My question is do you plan to seek societal and community support? And if you do not, do you intend to dispose of the spent fuel as planned irregardless?

MR. GROOM: The response that we provided was really provided in the context that this question is before the federal government as we speak. And the federal government is in the process of putting legislation in place which would provide criteria and a model that the industry as a whole in Canada would have to follow.

This model would be developed through a waste management organization. And NB Power will be a part of that and will abide by the directions that that organization develops and that the federal minister then finally accepts and identifies as the criteria for going forward.

So that will -- to answer your question specifically, that federal government plan will provide the criteria.

NB Power will abide by those criteria, meet those requirements.

MR. WHITE: I might add to what Mr. Groom is saying that part of the waste management organization's requirement as an advisory panel that brings forward societal views and also part of that waste management organization's task is to seek aboriginal input as to that process in consultation therewith.

MS. FLATT: Yes. I'm aware of that. I did review all of the aboriginal input to this issue and that as well prompted my question if you were going to seek further approval. But that is a great answer. It is in the hands of the federal.

MR. WHITE: With consultation and bring forward those issues in the final report to the federal minister who will then make a determination.

MR. DALZELL: In respect to slide number 10, please, the CO2 emission comparison, the CO2 mitigation strategy. In terms of the slide 10 particularly -- in terms of the alternative there with the gas, you have the question mark of course in terms of what the costs will be in this credit trading market. We heard at the Coleson Cove hearing the province of New Brunswick representative at the time, you know, said it is not inconceivable that

there could be $100 a ton cost, you know, for a CO2 ton and 50 to $60 a ton has been mentioned here. What impact will this have in terms of that alternative, in terms of the cost of this project?

I know you did -- you haven't been able to predict it exactly, but obviously even with the natural gas CO2 is going to be a factor and it is going to have to be paid for. I wonder if you could elaborate on that in terms of what are the costs going to be associated with that -- with the gas as one of the alternatives there that is identified?

MR. WHITE: Again, I reference you that is a Panel B question.

MR. DALZELL: Right. Okay. I'm sorry. We will have to make a note of that in Panel B. Thank you. I'm sorry.

In regards to the technical aspect of it, Mr. Stuart Groom had mentioned how Lepreau works and the fuel channels, the reactor, the steam, the hot water, the feeder tube life, et cetera, et cetera, in those slides from 52 along.

It was brought to our attention at one point that the hot water and the steam goes through the facility in different locations. And I'm just wondering in terms of the control room area if the hot water and hot steam is

going to be a factor in case of any kind of an incident, would this affect the operation of the facility if there ever was a rupture?

You mention about high pressure, 1,200, was it PST? And I'm just concerned and I wonder if you could elaborate if you had planned in your cost analysis or your analysis of safety these tubes going through the building near the control room area, and how that will be handled or planned for?

MR. GROOM: The piping that I think you are referring to are -- carries conventional ordinary water, hot water and some of the lines carry steam on their way to the turbine. We consider this a very important issue. We have addressed it extensively with the regulator. We have put in place procedures to monitor. We have made an argument about leak before break, and the regulator has accepted our strategy for dealing with the highly unlikely and improbable events of flaws developing in these lines and leading to an unstable break.

We think this issue is not different from any other conventional plant using carbon steel piping with hot water and steam in it. And the standard industry practices to mitigate -- monitor for and mitigate any chance of failure in these lines apply at Lepreau as it

would at any conventional plant.

MR. DALZELL: The reason I asked, of course, we had a tour of Coleson Cove last year and one of the technical experts was taking us through that facility and pointed out to one of these large pipes with the extreme steam and pressure, you know, inside and just, you know, told us that this is just a fact. So that is why we wanted to know if you had costed that in or if -- obviously, it is not going to be an issue so you didn't make any plans to remediate it.

MR. GROOM: We think we have already addressed the issue. And as I made the point before all of the industry consider this to be a very significant serious problem. It is a part of our design to deal with this on a routine basis.

MR. DALZELL: Okay. Thank you.

MR. WHITE: I would add to Mr. Groom's comment that we have on-line monitoring systems to detect any potential -- any leakage in any of those pipes.

MR. DALZELL: Thank you. Oh yes. I will just turn -- then A-5, that Citizens Coalition for Clean Air, number 3, response, book A-5 in the Saint John Citizens Coalition for Clean Air number 3, the response. I would just like to ask a further detail. That was interrogatories number 1.

I wonder if -- page 392. In respect to that response, the response was a US Communication and search firm of -- by Tony Research Inc. performed the telephone survey in March 2002. The survey was prepared for the Nuclear Energy Institute. It says NB Power is not aware of any Canadian poll regarding public opinion relating to the CANDU plant refurbishment.

Considering that the evidence shows in the slides that you are concerned about public involvement and have made effort to reach out to the public to explain the process, I'm wondering if you will or have done a Canadian survey, a New Brunswick survey or even a Canadian poll to kind of reach into the public opinion of people in Canada or even in New Brunswick and not just to rely on US public opinion polls?

MR. WHITE: Early in our public relations processes for dealing with the potential for refurbishment here, we did focus groups in New Brunswick with GCP Communications. And we did some polling at that time. And I have forgotten the exact number but it was something like around 65 percent plus were in favour of refurbishing of Lepreau.

MR. DALZELL: Is that right. Thank you. I didn't see that in the evidence. But thank you very much. It clarifies

that question.

Yes. That will conclude the questions from us at this point. Will there be other opportunities, Mr. Chairman, to ask questions later of other witnesses, or is this the -- the Panels?

CHAIRMAN: Well if -- for instance there have been two as I recollect that should be directed to the other Panel. You will of course have an opportunity to cross examine that Panel, if your question relates to that. But this will be your only crack at this particular Panel unless we get into the situation that Mr. Coon's contacts are correct and we get an announcement on Wednesday, then it might happen, in other words.

MR. DALZELL: Yes. Thank you very much. That concludes then the questions for Panel A. Thank you very much for the opportunity.

CHAIRMAN: Okay. Thank you. That is all for both of you?

MS. FLATT: Yes.

CHAIRMAN: Okay. Thank you very much. Does the City of Saint John have any questions? Okay. No questions from the City of Saint John. Mr. Coon, you will have an extensive cross examination I know that. Is it appropriate that we break now? I know in particular there is some -- the agreements were given and you should have

at least overnight to look at those, et cetera, so we will break for tomorrow morning.

MR. COON: I appreciate that Mr. Chairman.

CHAIRMAN: Okay. Would 9:30 be a good time to reconvene in the morning? All right. We will arise then until 9:30 tomorrow morning at 9:30.

Certified to be a true transcript of the proceedings of this hearing as recorded by me, to the best of my ability.

Reporter

(Adjourned)